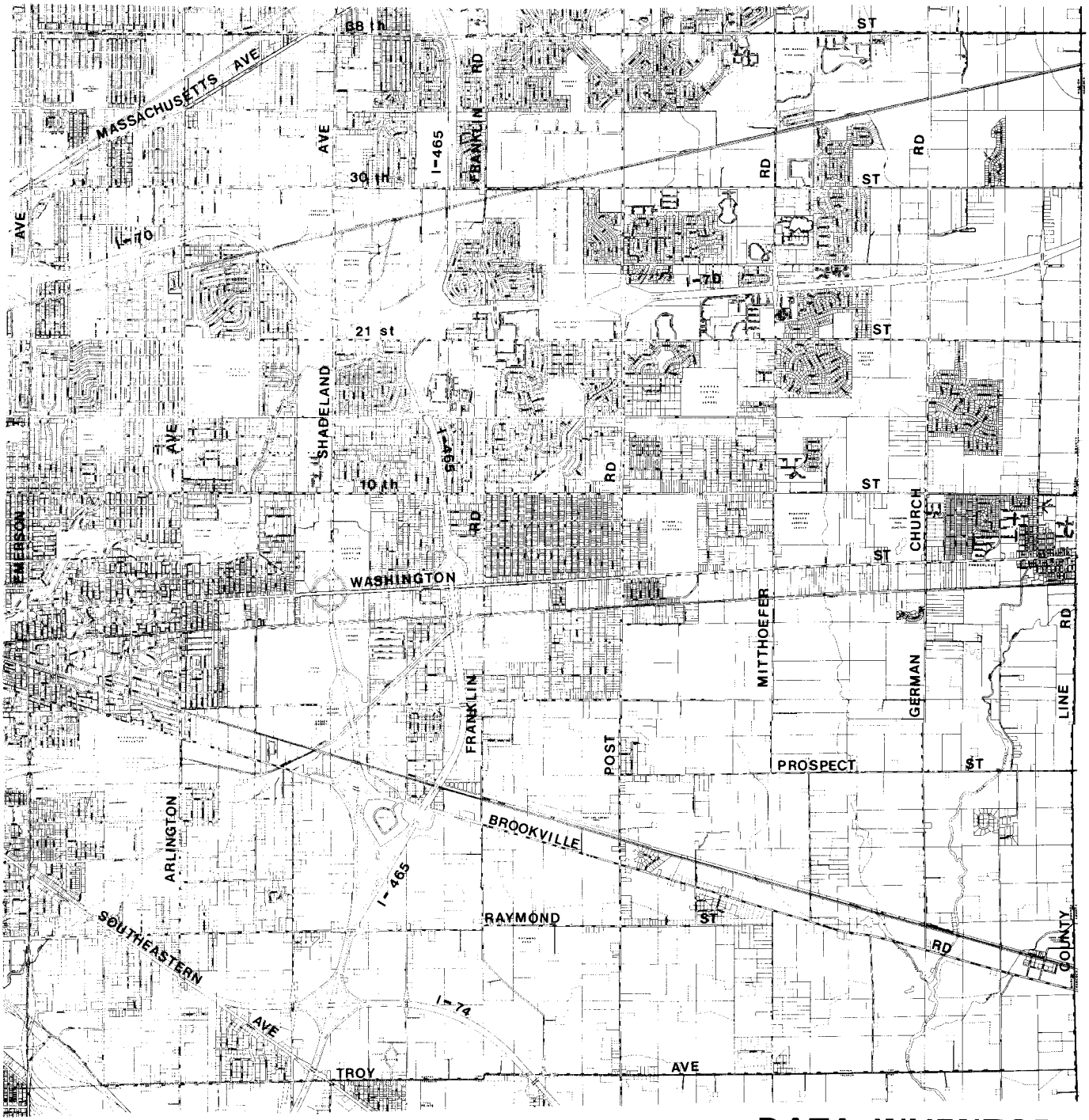
WARREN TOWNSHIP COMPREHENSIVE PLANNING STUDY



DATA INVENTORY

1990

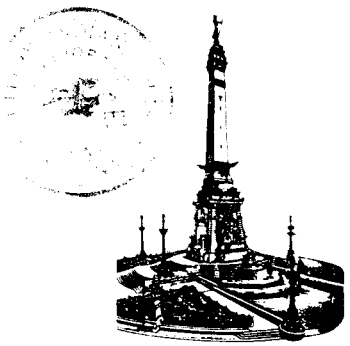
Indianapolis-Marion County, Indiana

Division of Planning

Department of Metropolitan Development

OFFICE OF THE MAYOR CITY OF INDIANAPOLIS

WILLIAM H. HUDNUT III, MAYOR



CITY OF INDIANAPOLIS

WILLIAM H. HUDNUT, III
MAYOR

STUART RELLER
ADMINISTRATOR

DEPARTMENT OF METROPOLITAN DEVELOPMENT
DIVISION OF PLANNING
2021 CITY-COUNTY BUILDING
INDIANAPOLIS, INDIANA 46204
(317) 236-5151

July 30, 1990

Dear Warren Township Citizens:

This Warren Township Data Inventory presents background materials that will be useful in the preparation of the Warren Township Comprehensive Planning Study.

The Warren Township Comprehensive Planning Study will provide a public forum for a discussion of the opportunities and the issues in this developing area. A little more than half of the land area is currently developed, and the remainder will present important development decisions over the next 20 years. The decisions that are being made now will impact the quality of life for current and future Warren Township residents.

During this study there will be an opportunity for all Warren Township citizens to participate in the planning process. The following materials provide a common base of knowledge to begin these important discussions. Additional information regarding the contents of this Data Inventory or information regarding participation in the Warren Township Comprehensive Planning Study can be obtained from the City of Indianapolis, Department of Metropolitan Development, Division of Planning. Please contact Tom Bartlett, Warren Township Planning Study Coordinator, at 236-5143.

Sincerely,

Stuart Reller

SR:tb/nw

WARREN TOWNSHIP

COMPREHENSIVE PLANNING STUDY

DATA INVENTORY

A Collection of Information
to Begin the Warren Township
Comprehensive Planning Study

City of Indianapolis - Marion County
William H. Hudnut, III, Mayor

Department of Metropolitan Development
M.D. Higbee, Director

Division of Planning
Stuart Reller, Administrator
Clarke Kahlo, Deputy Administrator
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(236-5151)

July, 1990

WARREN TOWNSHIP DATA INVENTORY

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SUMMARY

Warren Township is located in the east central portion of Marion County, and is over 30,000 acres in size. From 1960 to 1988, the total population increased over 50%, from 60,345 to an estimated 92,960. Most of this growth occurred in the northern portion of the township between 1960 and 1970. In the last two decades, population growth has been even more highly concentrated in the northeastern portion of the township. Population growth in the remainder of the township leveled off or declined in the last twenty years. Entering the new decade, the more rural southeastern portion of the township has the highest potential for development.

DEMOGRAPHIC PROFILE (1988 Population Estimate: 92,960)

Population Growth

Between 1960 and 1970 Warren Township's population grew at a rate of 42.2%, nearly seven times the growth rate for Marion County. Between 1970 and 1980 the township's rate of growth slowed to about 4.1%, and has risen only slightly to 4.2% between 1980 and 1988. For the two-year periods 1980-1982, 1982-1984, 1984-1986, and 1986-1988, the estimated rates of growth were about 0.03%, 1.07%, 2.19%, and 0.86%, respectively.

Age

Between 1960 and 1980, the township population of persons age 60 and older doubled. While the preschool population declined slightly in the same twenty-year period, the population of children age 5 to 19 and adults age 20 to 59 grew by about 50%.

Racial Composition

Blacks now constitute a higher percentage of the township's population than in 1960. Between 1960 and 1980, the black population in Warren Township rose from 1% of the township's total population to 8%. Most of the increase occurred in the northwestern portion of the township.

Education

Warren Township residents followed the national trend toward an increase in the level of educational attainment over the last twenty years. In 1980, 28% of Warren Township residents had at least some college education, compared with 21% in 1960.

Income

Between 1979 and 1987, Warren Township residents' incomes increased an average of 52%, compared with an average 59% increase in Marion County. Of the county's nine townships, Warren Township ranked sixth in 1987 in per capita income.

LAND USE CHANGES

Vacant Land

From 1973 to 1989, over 2,200 acres of vacant land were developed, reducing the amount of undeveloped land in the township from 16,772 acres (55% of total township acreage) to 14,539 acres (48% of the total).

Residential Land Use

From 1973 to 1989, residential land use increased by 11% (865 acres). Residential land uses accounted for 27% of the township's total land in 1973, and 30% of the total in 1989.

Commercial Land Use

Land used for commercial purposes increased by nearly 89% between 1973 and 1989. Over 600 acres were converted to some type of commercial use during that period, bringing the portion of township land used commercially to over 4% of the total.

Industrial Land Use

Land used for industry increased 29%, from 1,507 acres in 1973 to 1,949 acres in 1989. In 1989, over 6% of the township's total acreage was devoted to industrial land uses.

Public and Semi-Public Land Use

Public and semi-public land uses accounted for 321 more acres in 1989 than in 1973, a 10% increase for that land use category. Its share of the township's total land acreage was 12% in 1989.

ZONING CHANGES

Residential Category

Acres zoned residentially in Warren Township did not change significantly between 1973 and 1989. Very low density and low density (or single-family) zoning increased by about 130 total acres, while medium-density (or multi-family) zoning increased by about 57 acres.

Commercial Category

Land zoned for commercial purposes increased by 1,024 acres (84%), largely as a result of an 83% increase (872 acres) in the amount of land zoned for retail use. By 1989, land zoned commercially accounted for 7% of the township total.

Industrial Category

Industrially zoned land represented slightly less than 13% of all land in Warren Township in 1989, down from slightly over 13% in 1973. A total of 3,860 acres were zoned for industrial uses in 1989, compared to 4,000 acres in 1973. General industry occupies over twice as much land as light industry--2,632 acres to 1,228 acres.

Public and Special Use Category

Acreage devoted to public, semi-public, and special use zoning increased over the sixteen-year period, from 2,031 acres in 1973 to 2,719 acres in 1989. These zoning categories, which include parks, comprise 9% of the entire township.

Agricultural Category

Agriculturally zoned land acreage declined from 12,257 acres in 1973 to 10,498 acres in 1989, a decrease of over 14%. Agricultural districts accounted for 35% of the township's total acreage by 1989.

LAND USE, ZONING, AND COMPREHENSIVE PLAN COMPARISONS

Residential Use

In 1989, 1,972 more acres were zoned for residential development than were actually developed. The Comprehensive Plan recommends that 20,340 acres be developed eventually for residential use (67% of the township). This is more than twice as much residential development as that which existed in 1989.

Commercial Use

In 1989, 946 more acres were zoned for commercial use than were actually developed. However, the 2,245 acres zoned for commercial use in 1989 surpassed the number of acres recommended by the Comprehensive Plan for such use (2,138 acres).

Industrial Use

While 3,860 acres were zoned for industry in 1989, 3,954 acres were planned for industry. Currently, only 1,949 acres are actually developed industrially.

Public, Semi-Public, and Special Uses

More land is shown on the Comprehensive Plan Map as recommended for public or semi-public use than is actually developed or zoned. This is due mostly to the interpretation of the Comprehensive Plan's "urban conservation" land category as "semi-public"--an interpretation which is misleading. Much of the land shown by the plan as recommended for urban conservation can actually be developed, but it should be developed so as to minimize any potential adverse impacts on the natural habitat. Likewise, the amount of land zoned for public and semi-public uses is difficult to compare with that planned or actually developed for such uses because 1,896 acres of public streets are not zoned. Regardless of which data is solicited, in 1989 public and semi-public lands accounted for roughly 12% of total township acreage.

Agricultural Use

Over one-third of total township acreage was zoned agriculturally in 1989. The Comprehensive Plan assumes full development with no agricultural land remaining. As of 1989, in terms of actual land use, 14,539 acres remained undeveloped, with most of that being utilized for agriculture.

TRANSPORTATION SYSTEM

Warren Township's street system is designed in a basic grid-like pattern, with Washington Street, I-70, Massachusetts Avenue, and Southeastern Avenue serving as "spokes" that move traffic in and out of the downtown area. Michigan Street and New York Street also connect the township with Downtown Indianapolis.

Public Transit

The Indianapolis Public Transportation Corporation (METRO) currently operates 12 routes that serve Warren Township, including two express bus routes and four park-and-ride locations.

Bridges

There are 46 public bridges in the township, 11 of which have sufficiency ratings considered to be below satisfactory.

High Accident Locations

Warren Township has 13 high accident intersections. Of the 48 most troublesome intersections in Marion County in 1989 only three are in Warren Township.

Warren Township Network Performance

Presently, 88% of the township's roadway miles operate at acceptable levels-of-service. If all priority improvements proposed in the Official Thoroughfare Plan are implemented, congestion will be even less of a problem in the year 2005.

Planned Roadway Improvements

There are 26 specific projects currently proposed for Warren Township during the 1990-1994 transportation program period. These projects include: Long Range Plan Improvements, Transportation System Management (Short Range) Improvements, Bridge Improvements, and other improvements. The total project cost during the five-year program period is estimated at approximately $32,500,000.

PUBLIC SCHOOL SYSTEM AND COMMUNITY SERVICES

Warren Township Schools

Warren Township Metropolitan School District had a 1989 enrollment of 9,076 students, while Indianapolis Public Schools within Warren Township enrolled a total of 4,371 students, and private schools within the township enrolled a total of 1,430 students. Public school enrollments have declined steadily since the early 1980s, but no public school closings (or openings) are anticipated in the near future.

Fire and Police Protection

Fire protection services in Warren Township are provided by several departments cooperating through either specific contracts or "mutual aid" agreements. There are six fire stations in Warren Township--four operated by the Warren Township Fire Department and two by the Indianapolis Fire Department. The Warren Township Fire Department has plans for two new stations in the near future. Emergency medical services are provided by both the Warren Township Fire Department and the Indianapolis Fire Department. Police protection follows essentially the same jurisdictional lines as fire protection.

DEVELOPMENT DETERMINANTS IN LAWRENCE TOWNSHIP

Soils

Soil information indicates that most of currently urbanized land in Warren Township is rated "severe" for septic systems. The "severe" rating is attributable to surface water ponding, slow permeability, and a high seasonal water table. Overcoming these

severely limiting soil characteristics requires both sanitary sewer service and an adequate drainage system.

Sanitary Sewer Systems

Much of the northern half of Warren Township is served by sewers. Those areas where sewer service is not present must rely upon septic systems. Other than in the case of newly constructed residences (usually in subdivisions), and most new nonresidential development, sewer service extensions are rare.

Drainage System

Several drainage improvements are currently being implemented in Warren Township.

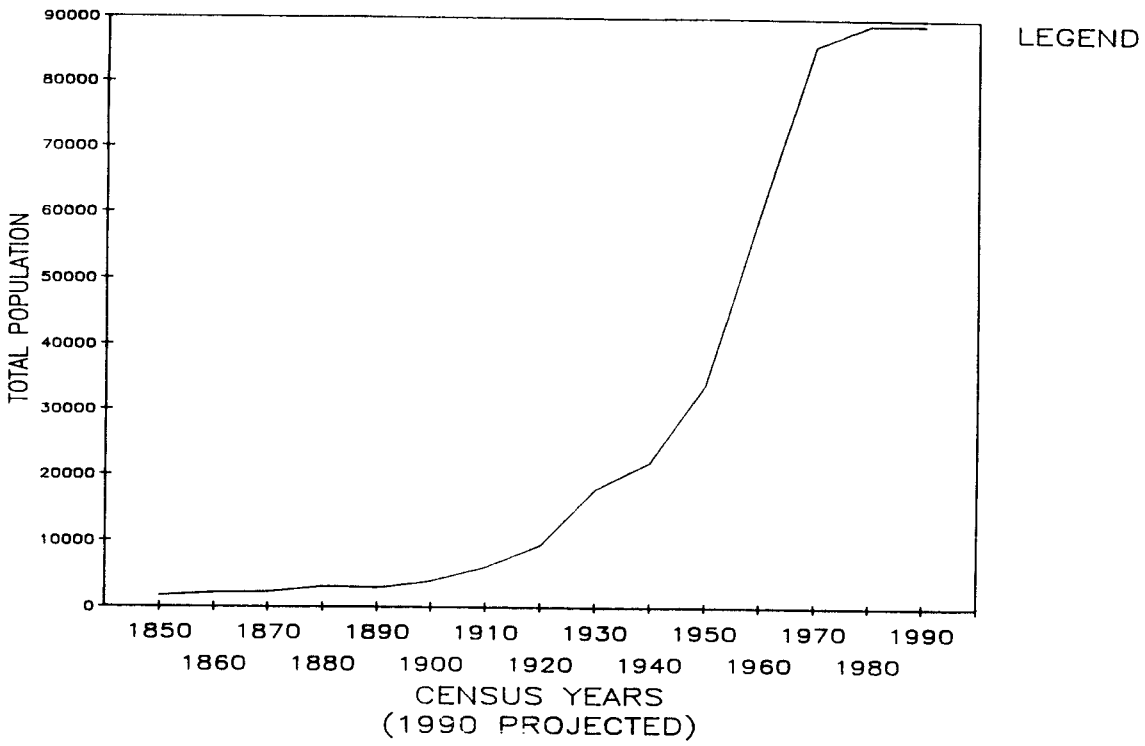
Gas, Electrical, and Water Service

Almost all developments in Warren Township are served by gas, electrical, and water service.

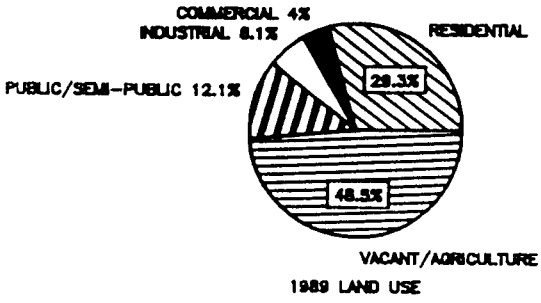
WARREN TOWNSHIP PROJECTIONS

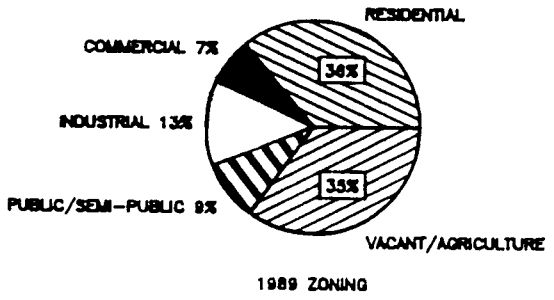
Full development of the township could be reached as soon as the year 2030, assuming that future growth and land development follows the recommendations made in the 1984 Comprehensive Plan and that the growth rates experienced by Warren Township for residential, commercial, and industrial development over the past twenty-five years continue into the future. Upon reaching a fully developed state, Warren Township will contain over 50,000 additional housing units, nearly 47,000 new households, about 3.5 million square feet of additional commercial space, and another 27 million square feet of industrial buildings. Total population would increase to 184,000 persons.

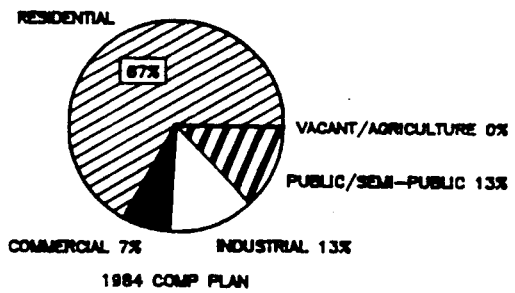
POPULATION GROWTH, 1850 – 1990 FOR WARREN TOWNSHIP



WARREN TOWNSHIP LAND USE COMPARISONS







INTRODUCTION

PURPOSE

The purpose of planning in Warren Township is to ensure the preservation, redevelopment, and enhancement of existing development while encouraging efficient and orderly new growth. Through the efforts of the city and the residents of the township, a plan can be developed with specific guidelines for the coordination of resources, the reinforcement of township goals, and the realization of township residents' ideas. When the township plan is finalized by the township residents' advisory board and officially adopted by the Metropolitan Development Commission, it becomes a guide for implementing public improvements programs, making decisions on zoning cases, inviting private investment, and creating an orderly land use pattern for the development of the township.

WHAT IS TOWNSHIP PLANNING?

The township plan is a detailed plan of a part of the county. This plan is a refinement of the overall Comprehensive Plan for Marion County. Since its major function is to guide development, the plan does not mandate action, but outlines the necessary steps to action. Township planning seeks to guide both short-term and long-term improvements, but is focused principally on those changes which may require considerable time and effort to accomplish.

A vital part of township planning is the involvement of the residents, who stand to benefit from joining planning staff and officials in a participatory process. Residents first express their needs and desires to the planning staff. The staff examines these needs and desires, interprets them in light of research on the township's assets, problems and community resources, and formulates recommendations for improvement. Thus, meaningful goals, policies, plans, and programs result when citizens, planners, and local interest groups exchange information. The end product is a consensus document reflecting a partnership between the township residents and the city. The township plan sets the stage for continuing community-government relations and shows the steps required for implementation over a 20-year period.

THE PROCESS

The staff of the Division of Planning, of the Department of Metropolitan Development, together with other city agencies, the Warren Township Advisory Board, and other interested groups and individuals, will work together to prepare the Warren Township Comprehensive Plan. The process includes the following principal steps:

1) Preparation of a data inventory;
2) identification of neighborhood assets and problems;
3) establishment of neighborhood issues and goals;
4) preparation of planning recommendations;
5) review and update of planning recommendations;
6) preparation of a general land use plan and a specific zoning plan;
7) preparation and printing of the final plan;
8) adoption of the plan by the Metropolitan Development Commission.

CHAPTER 1

WARREN TOWNSHIP HISTORICAL PERSPECTIVE

TOWNSHIP BEGINNINGS

It was February of 1821. Bitter cold froze the dormant, ice-etched landscape of central Indiana in a primordial, black-on-white tableau unbroken by the first trace of the white man's encroachment. The Indians, inherently respective of nature, had lived in mutually-beneficial peace with the land for centuries. The government's 1818 Relocation Treaty with the Delaware Indians, however, had opened up the central part of the state for settlement, creating a vacuum that soon would be filled by pioneers. Matched against the eastern immigrants' passion to change and control--to "conquer"--their environment, the land seemed to wait in resignation for its vanquishers--the restless, opportunist seekers of change.

Marion County was surveyed and divided into nine townships in 1820 in preparation for the establishment of Indianapolis as the new state capital the following year. As was the general custom of the time, most of the townships were named for heroes of the Revolutionary War and the War of 1812. Warren Township was named after Joseph Warren, a Boston physician who, with Samual Adams, was one of the primary forces behind the formation of the Radical Party after the Stamp Act crisis of 1767. He subsequently became the party's principal protagonist and policy planner, the leader of a colonial intelligence group called the Sons of Liberty. In 1774, Dr. Warren was elected president of the Massachusetts Provincial Congress, his first political office. At the outbreak of hostilities with the British, he became president of the Massachusetts Revolutionary Government and organized militia from Connecticut, Rhode Island, and New Hampshire into the inexperienced rebel army that fought the first skirmishes of the War of Independence at Concord and Lexington. Three days after being named Major General by the Provincial Congress, he fought at Breed's Hill, the actual site of the Battle of Bunker Hill. The last to leave the rebels' redoubt there, Dr. Warren was killed by a British bullet.

EARLY SETTLERS

Decades after the Battle of Bunker Hill, the land referred to as Warren Township remained a fully grown forest of oak, beech, maple, poplar, hickory, elm, sycamore, walnut, mulberry, and ironwood. The forest surrounded large tracts of swamp and floodplain and was blanketed by thick underbrush. It was just such an environment that met Harris Tyner as he cleared a trail through the eastern portion of Marion County in search of a homestead. After leaving Kentucky for Franklin County, Indiana in 1805, he moved to Warren Township in 1821 and is generally

regarded as the first settler to take permanent residence in the township. Tyner lived at his homestead until his death in 1881. During his sixty-year residency, he served as a county commissioner for twelve years and was elected the first Coroner of Marion County.

Another early settler was Henry Brady. In 1824, at age 27, he made his way from Athens, Ohio to Warren Township. He settled on land six miles east of the original Indianapolis town line and began clearing the land for his farm, which he made into one of the best improved tracts in the county. He remained healthy and vigorous well into his ninetieth year and served at various times as Township Surveyor, a teacher, and a magistrate. A Democrat, he represented Marion County at different times in both branches of the legislature.

Also in the early 1820s, Andrew Morehous, a man who grew up as an orphan in New York, set out to the west. Mr. Morehous walked across northern New York State to Olean, where he found work on a lumber raft and floated down the Allegheny and Ohio Rivers to Cincinnati. Mr. Morehous liked the land around the Ohio Valley and decided to settle in the Midwest. He walked back to New York to make arrangements for his resettlement, then once again floated downriver to Cincinnati. In March of 1823, having carefully saved his money, he walked to Indianapolis, where he purchased one hundred sixty acres of land on Lick Creek at Brookville Road, about five miles east of the city. Mr. Morehous soon decided to return to Cincinnati to earn money for purchasing an additional eighty acres adjoining his property. Before he left, however, he "built a cabin of round logs, split puncheon floor, and a clapboard door hung on wooden hinges, cut down four acres of heavy timber, and piled the brush." He then walked to Cincinnati, earned the needed money, and walked back to Marion County, where he bought his land and began in earnest the development of his homestead.

Mr. Morehous married Theresa White from Kentucky in 1825. Their honeymoon largely consisted of clearing and burning brush from dawn to dusk--a task interrupted only by three meals of corn bread and wild game. By April they had cleared three acres, which were sewn in corn except for one corner devoted to flax for clothing. Spaces between felled logs were planted in pumpkin and potatoes, two staples of pioneer life. In the fall of the year, an ongoing skirmish with deer, racoons, and squirrels for possession of the crop endured until the corn and potatoes were safely harvested and stored in the cabin loft. The pumpkin was cut into thin strips and hung on poles to dry.

It was a successful first year for the Morehouses. Taking the proceeds of his corn crop to Ohio, Mr. Morehous purchased fifty apple seedlings and a number of cherry trees. When he returned he planted the first orchard in Warren Township. The Morehous farm prospered, as did the burgeoning City of Indianapolis, which provided an insatiable market for his produce.

Underscoring the hardships of pioneer life, Mr. Morehous later fell victim to a tragic accident on his own farm. While he was beneath the ground's surface digging a well, a bucket of dirt fell into the well and onto his head. Although he survived the accident, he suffered its effects until he died in 1868.

Warren Township was home to other notable settlers. Robert Brown, for example, was widely acknowledged as the best marksman in central Indiana and as such was often barred from shooting contests simply to give others a chance at winning the first prize of the hide and tallow. Another, Reason Hawkins, built the township's first sawmill just west of Cumberland. Elias and Mahala Shimer unofficially operated the first orphan asylum in the township; Joseph Clinton served ten years as a Justice of the Peace; and Mary "Granny" Askren became an accomplished hunter after the premature death of her husband, Thomas. On one occasion, Mrs. Askren traveled alone by horse in mid-winter to Nashville, Tennessee to tend to and escort home her son, who had been wounded in the Civil War.

An ugly incident and its outcome speak to the settlers' inherent sense of morality. In February of 1824, five white men killed an Indian trapping party to steal their furs. Four of the five were captured. The event is significant in that it was the first time in the United States that a white man was indicted, convicted, and executed for the killing of an Indian.

SCHOOLS

By 1850, the pioneer era of Warren Township was in its decline and a flourishing farming community in its ascendency. One indication of the transition was the emergence of more formal schooling in that decade.

The excellence of the Warren Township Metropolitan School District would only have been improbably predicted from its humble beginnings. The first school in the entire township was located in an abandoned log cabin owned by Andrew Morehous. The school today can be found three blocks south of Brookville Road between Hunter and Kitley Avenues. School was conducted from dawn to dusk except during planting and harvesting seasons. Its first pupils were required to cut trails to the school from their homesites. This was the same school that, in its inaugural year, devised a unique method of "treating" the students on Christmas Day. The schoolmaster treated each of his pupils with a tot of toddy made from donated whiskey and honey. The "treat" was repeated and the children sent out to recess until all the potion had been consumed. The best attendance figure of the year was attained that day and, as reported by one chronicler, "Nary a child tarried at play when called from recess for another round." No trace of this practice seems to have survived this first Christmas.

With the passage of the Indiana Common School Law in 1851, Warren Township became responsible for its own school system. In 1854, the District 9 schoolhouse was built at the corner of Raymond Street and Hunter Road. It was known as Blain School until the name was changed to Lowell School in honor of James Russell Lowell. By 1872 the schoolhouse had become too small for its enrollment, and the school district purchased a lot for a new school at 6700 East Raymond Street. When residents learned that more water drained to the school site than away from it, they strongly suspected purchase irregularities, but none were proven. The school became commonly referred to as "The Swamp College."

THE EMERGENCE OF TOWNS

In the mid-1800s, travel routes in the township were limited. Cumberland Road, or the National Road, was the main east-west connector with Indianapolis. (In addition to being called the National Road, Cumberland Road was also called U.S. Route 40 and Washington Street.) Brookville Road connected the city to the small farming community of Julietta, and Southeastern Avenue was the segment of Michigan Road that connected Madison with Michigan City. Three main population centers emerged: Cumberland as an important way-station on the National Road; Julietta as an agricultural center; and Irvington as a residential and cultural community.

Cumberland

The town of Cumberland was named for its location on the Cumberland Road. At its inception, Cumberland was no more than a way-station that offered overnight accommodations and food to travelers bound for Indianapolis and beyond. In 1830 Cumberland Hall was built to house travelers and immediately attracted a cluster of houses around it. Many of its original settlers were laborers who had worked on the road for sixty cents a day and had saved enough to buy small farms in the community. The original town was platted in 1831 by Henry Brady on Samuel Fullen's land. Mr. Fullen and his wife, Ann Pogue (daughter of Marion County's first settler, George Pogue), built and operated the town's first tavern.

The tavern, as the National Road itself, was considered with high suspicion by the church-minded folks of the township who predicted that it would bring "gamblers, shady ladies, and hard-drinking toughs" to the township. History records that it did, in fact, do just that. Cumberland became known as a rough-and-ragged community in the late 1890s and early 1900s. A popular story related at the time involved an inebriated gentleman boarding an interurban who, when asked his destination, indignantly slurred, "Go to hell!"--at which the conductor replied, "Cumberland it is, then, mate." (A narrow gauge railroad, the interurban was considered more dependable

and quicker than railroads. Christened "Wind-Splitter," its only disadvantage seems to have been its constant swaying, which often resulted in a condition termed "interurban sickness.")

Occasions for social gatherings at the time were limited for the most part to church activities and political functions. Taverns provided a far less formal environment for camaraderie. An uneasy truce existed between the taverns and the church community, with politicians gingerly occupying the middle ground. At least this was true until John Little decided to expand the Fullen Tavern to include overnight accommodations for as many as twenty guests, a saloon, and a gambling room on the second floor. The morally righteous of the community, threatened with the twin abominations of drinking and gambling, took matters into their own hands. In the spring of 1882, a group of like-minded men from Indianapolis descended on the establishment and did a rather thorough job of ransacking it. When the business reopened later in the year, it did so with the conspicuous omission of the gambling room--and the uneasy stalemate continued. It was with a degree of relief and legitimacy that the first general store opened in 1880 under the proprietorship of John Stevens.

A strong sense of moral turpitude pervaded the homesteaders of these early settlements. Justice was often swift in the pursuit of the real or perceived wrongdoer. In 1899, the Warren Township Company of the National Horse Thief Detective Association boasted the largest membership of any company in the nation. In 1925, it was still ranked ninth of three hundred eighty U.S. companies. In its fervor for "justice," the group unfortunately was known to inflict its own brand of vengance on the accused without benefit of trial. With strong ties to Ku Klux Klan and open to the excesses common to such vigilante groups, the company survived for over fifty years before its demise.

Mail delivery was a somewhat haphazard occurence during these times. The Cumberland Post Office, established in 1842, consisted of a Mr. Striely, who would irregularly deliver mail that arrived by Pony Express from Cincinnati--that is, until one day in a fit of unexplained disgust he pitched the day's delivery into the middle of Cumberland Road. A local businessman discovered the mail and brought it to his store, where townfolk picked it up. As chance would have it, he--not Mr. Striely--became known as Cumberland's first postmaster. This system of distribution continued until 1941 when home delivery finally began in the town.

Cumberland's population did not increase dramatically until the last two decades. A reminder of the town's early development exists in one of the earliest brick structures in the township--a two-story building built by Christian and Christiana Watterman in 1851 at 6010 Southeastern Avenue. The first town board was not elected until one hundred years later, and the town flourished under its first formal government. In 1968

Cumberland Heights was purchased and in 1973 Glen Oaks was annexed. In 1970 Cumberland's population stood at 1,053. By 1980, its population had doubled to 2,246 and growth has continued until present, although at a slower pace.

Julietta

Julietta, a small settlement situated on Brookville Road at the Hancock County line, served as a center for the farming community in southeastern Marion County and western Hancock County. It was surveyed in 1868, and in 1870 the plat was recorded in the county recorder's office. By mid-1880 the town had two stores, a blacksmith's shop, a post office, and a doctor. Its population had leveled off at about fifty inhabitants. Through the years it remained a small rural center--little more than a footnote in Marion County history.

A testimony to the considerable number of German immigrants who had taken up farming in the southern portion of Warren and Center Townships was the German Pike, the main east-west road in this part of the county. Due to anti-German sentiment after World War I, the road was renamed Liberty Pike and subsequently became known as Raymond Street. Other vestiges of German immigration to the township remain in road names such as Mitthoefer, German Church, and Senour.

Around the turn of the century, an asylum for the incurably insane was established in Julietta. It served this purpose until 1938 when its function was transferred to Central State Hospital. The facility then became the Asylum for the Poor. It achieved a degree of notoriety later as the result of a series of Grand Jury investigations prompted by Indianapolis Times allegations of narcotics thefts, alcoholism, filth, and faulty financial records. The less jaded taxpayer of the community was shocked to learn that the institution, run by a superintendent hired merely for patronage reasons, had largely functioned as "a hotel for winos and transients." On the positive side, this experience was instrumental in establishing qualifications for future superintendents that were other than political. The facility is now known as the Marion County Healthcare Center.

Irvington

Early settlers of what was later to become the town of Irvington included the Parkers and Joseph Sandusky. The "Old Parker Graveyard" is still located at the rear of what is now 29 South Parker Street and the Sandusky homestead was located at what is today 29 South Audubon Road. Mr. Sandusky later rented part of his land to John Ellenberger, who farmed the land along with a tract north of Irvington which Ellenberger had purchased in 1858. This latter tract today is the site of one of the city's major regional parks, named in Mr. Ellenburger's honor (despite an abortive attempt by the Park Board to rename it Julian Park.)

Jacob Julian and Sylvester Johnson purchased 320 acres of the Sandusky farm and, in 1870, the first survey of the town was conducted. Irvington (named for Washington Irving) was in every sense a planned community. The two founders had in mind a unique community removed from the urban turmoil and societal evils of the capital. Clearly the town was to be an Elysium--an elitest refuge for the wealthy literati of the time.

The plat of the town was artistically designed with curving streets radiating from town circles and squares. The road layout was appreciated by all but nonresidents, who consigned the street plan to the wanderings of a lost cow. Average lot sizes were to be an acre and the minimum allowed cost of a home was $6,000--a fortune at the time. As further insurance of a controlled, proper community, liquor outlets and distilleries, breweries, soap factories, and slaughterhouses were banned by deed, as were all privies within twenty yards of a thoroughfare.

Irvington's first town school was opened in the parlor of a home on Irvington Circle. A regular school building was opened in 1874 at Audubon Road and University Street. A second school building, built to replace the original after a fire destroyed it in 1898, also burned to the ground several years later when a janitor, strongly suspected of heavy drinking (presumably outside the town limits), over-fired the school's furnace.

The town became a home to academicians, poets, authors, and playwrights and flourished as a cultural center until the mid-1940s. The cultural atmosphere was greatly enhanced when Northwestern Christian University relocated in the town. Renamed "Butler University" in gratitude for the largess of the Ovid Butler family, it was the first university in the United States to offer completely equivalent curricula for male and female students. The marriage between the town and the university was to last many years until, hemmed in on all sides by residential development, the university was forced to relocate in 1928 to Fairview in Washington Township.

Faced with an already high tax rate and the need to develop a more dependable water supply, Irvington allowed its annexation by Indianapolis in 1902. The decline of the town as a suburban refuge for the "hoi aristoi" began in the 1920s when the streetcar made the town easily accessible to "cityfolk" and demand for an increased housing supply led to the subdivision of town lots to accommodate small, less expensive houses. Unwanted publicity was focused on the town with the lurid criminal prosecution of one of its prominent citizens, D. C. Stevenson, head of the state Ku Klux Klan, and the revelation that in 1932 and 1933 the old "Ricketts Farm" just south of the town had served as an intermittent refuge from the law for John Dillinger.

Warren Park

Last in the line of Warren Township incorporations was the Town of Warren Park. Originally platted in 1913, it was incorporated as a town in 1928. Its town board was elected the same year, with Robert Fuller serving as its first president. The board's first action was the passage of an ordinance prohibiting disposal of trash in Pleasant Run within the town limits, supporting the adage--for Marion County at least--that "the only new problems are problems of magnitude."

One of the more enduring landmarks in the Warren Park is the Hilltop Tavern situated on the site of Everett Claghorn's first grocery store. The tavern established a reputation of sorts in that over time it hosted many memorable bar fights, knifings, and shootings. This reputation was tacitly acknowledged by the town's constabulary when it developed as a matter of need a special intervention strategy for Hilltop Tavern disturbances. One sensational case involved the killing of a policeman by a bar patron, which set off a two-day manhunt involving as many as one thousand local, state, and federal lawmen. The tavern's owner, Tom Quigley, conducted a running battle with townsfolk in quest of a "Three-Way" liquor license from the Alcoholic Beverage Commission. Over time the annual gatherings of the Commission, Mr. Quigley, and town remonstrators bordered on the ritualistic.

Warren Park also became a significant residential area in the township, as had Cumberland and Irvington before it. Some major changes affecting Warren Township's overall growth came later.

TOWNSHIP DEVELOPMENT AND GROWTH

Perhaps the most significant factor in Warren Township's growth was the development after World War II of the extensive industrial/commercial corridor along Shadeland Avenue. Western Electric, Ford, Chrysler, and RCA each opened an operation in that corridor. Completion of I-465, I-70, and I-74 produced further growth in the township's industrial base, which in turn attracted further residential growth. Subdivisions and apartment complexes multiplied and gave rise to second- and third-generation suburban shopping developments. From 1960 to 1980, the population of the township increased dramatically. Growth has continued in the 1980s at a slowed pace, perhaps due in part to the long-term effects of the relocation of industries such as Western Electric and Ford.

Warren Township holds potential for further development. This plan being undertaken by the city and residents of the township will help mold a future that is consonant with the past as well as promising for future residents.

CHAPTER 2

WARREN TOWNSHIP DEMOGRAPHICS

POPULATION

Warren Township has experienced moderate growth during the past three decades. The total township population has increased from 60,345 in 1960 to 92,960 in 1988 (estimated)--an increase of approximately 50% over the twenty-eight year period. Most of this growth occurred between 1960 and 1970, with the population increasing by 42% during that decade. The rate of growth slowed considerably after 1970. (For population data for the period 1960-1988, see Table 1.)

The growth in Warren Township can be put into clearer perspective when contrasted with the rates of growth experienced by Marion County's other eight townships. Between 1960 and 1970, Pike was the fastest growing township in the county, with a 125% increase in its population. The next fastest-growing township was Lawrence Township (93% increase), followed by Perry (58% increase). The remaining suburban townships grew at much lower, though still strong, rates (from 27% to 42%). Center Township lost 18% of its 1960 population by 1970.

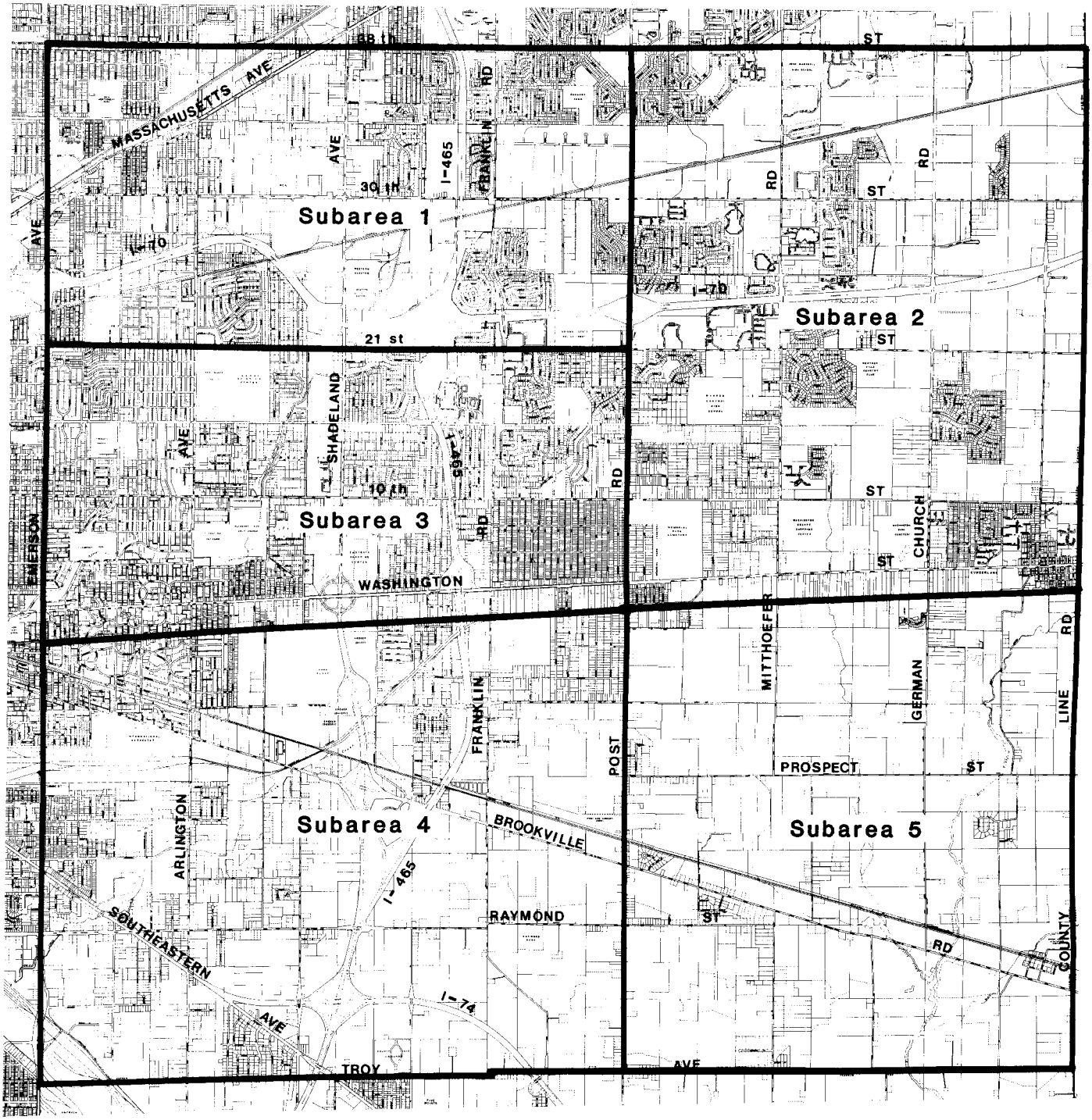
Between 1970 and 1980, Warren Township's growth, like that in the rest of Marion County, had slowed. The township's population increased only 4% during that decade, while Pike, Franklin, and Decatur Townships grew much more quickly (69%, 60%, and 28%, respectively).

More recently, (1980-1988) Warren Township's growth has picked up slightly, to 4.2%. By contrast, Pike Township's population increased by 45%, while Lawrence Township's grew by 14%. The next fastest-growing townships were Franklin and Decatur, with 9% and 8% increases in population, respectively.

Of the five subareas in the township (see Map 1), Subareas 1 and 2 accounted for nearly all of the township growth between 1960 and 1970. Together these two subareas welcomed 18,734 new residents to the township population during the decade, accounting for nearly three-fourths of the total increase for the period. Subareas experienced either constant or declining population levels during the 1970s. The township's net gain of 3,371 new residents between 1970 and 1980 stemmed from an increase of 10,991 persons for Subarea 2, offset by a population decrease of more than 7,000 in the remaining four subareas.

Age Structure

With regard to the township's population change by age groups, some interesting trends are evident (see Table 1 and Figure 1).



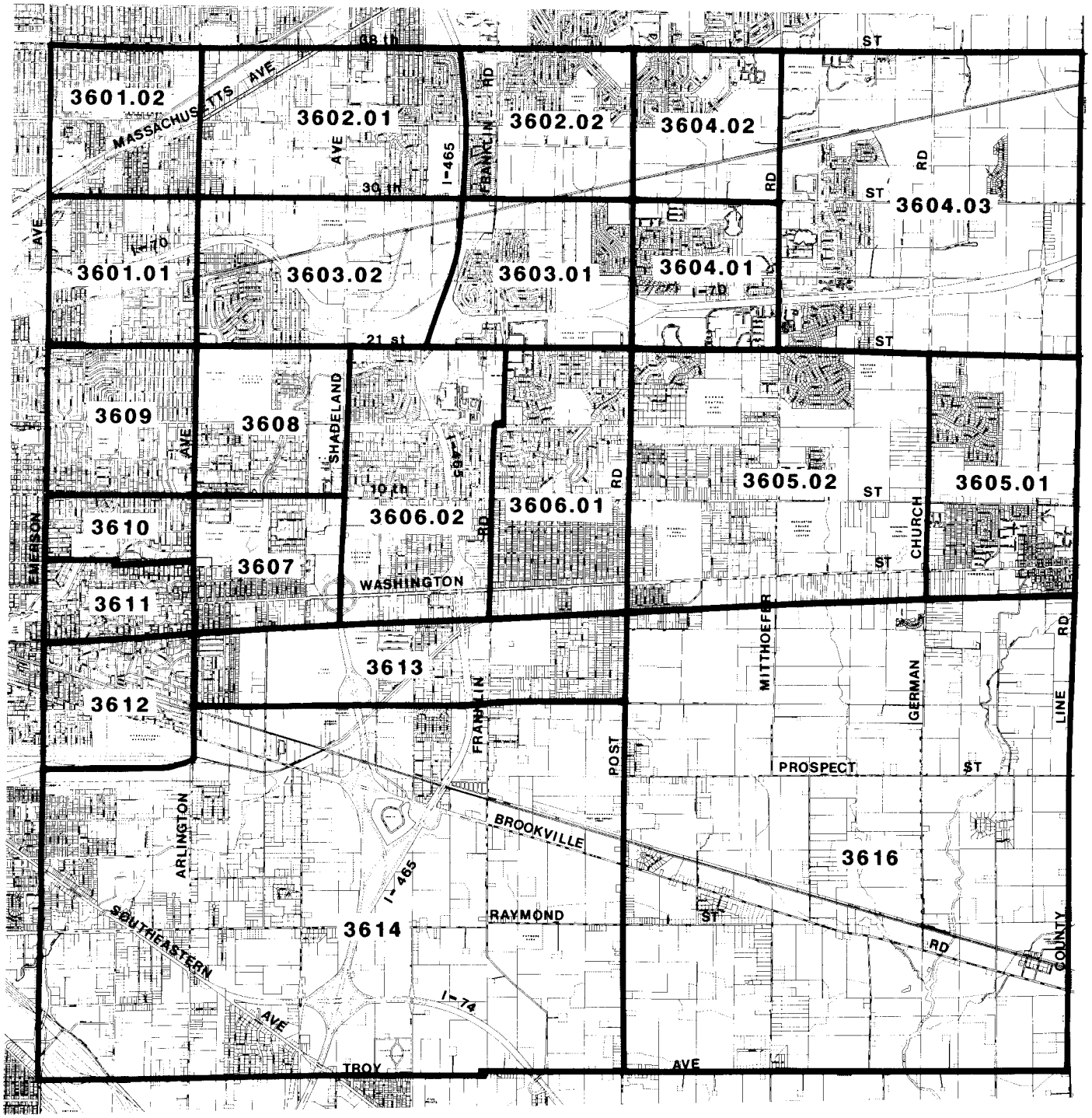
WARREN TOWNSHIP

MAP 1 / SUBAREA LOCATIONS

The preparation of this map was financed in part by a Community Development Block Grant

N

Department of Metropolitan Development
Division of Planning
Indianapolis-Marion County, Indiana



WARREN TOWNSHIP

MAP 2 / 1980 CENSUS TRACT LOCATIONS

The preparation of this map was financed in part by a Community Development Block Grant

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Department of Metropolitan Development
Division of Planning
Indianapolis-Marion County, Indiana

TABLE 1

DEMOGRAPHIC PROFILE OF WARREN TOWNSHIP

ITEM/AREA	1960	1970	1980	60-80 % CHANGE	1982	1984	1986	80-86 % CHANGE
POPULATION								
Total								
Warren Township	60,345	85,833	89,331	48.0				
Marion County	697,567	792,299	765,233	9.7	771,670	774,774	785,000	2.6
Under 5 years								
Warren Township	7,466	7,594	6,200	-17.0				
Marion County	85,216	70,867	57,075	-33.0				
5-19 years								
Warren Township	15,344	26,521	22,261	45.1				
Marion County	180,412	238,095	186,967	3.6				
20-59 years								
Warren Township	30,928	41,685	47,455	53.4				
Marion County	345,500	383,714	409,179	18.4				
60-64 years								
Warren Township	2,241	3,231	4,020	79.4				
Marion County	27,248	31,485	32,714	20.1				
65 years and over								
Warren Township	4,385	6,802	9,395	114.3				
Marion County	59,191	68,138	79,298	34.0				
HOUSING								
Total Units								
Warren Township	18,249	26,618	32,701	79.2				
Marion County	211,798	251,522	285,092	34.6				
Owner Occupied								
Warren Township	14,681	19,588	21,868	49.0				
Marion County	136,064	154,941	168,539	23.9				
Renter Occupied								
Warren Township	3,568	7,030	10,833	203.6				
Marion County	75,734	96,581	116,553	53.9				
HOUSEHOLDS								
Total Households								
Warren Township	18,249	26,619	32,696					
Marion County	211,798	257,522	275,092					
Persons/Household								
Warren Township	3	3	2.72					
Marion County	3.23	3.09	2.63					

PER CAPITA INCOME	1979	1981	1983	1985	1987	79-87 % CHANGE
Warren Township	7,749	9,081	9,630	10,762	11,739	+ 51%
Center Township	5,088	5,997	6,444	7,071	7,866	+ 55%
Decatur Township	7,213	7,864	9,037	10,117	11,396	+ 58%
Franklin Township	8,556	10,070	10,422	11,829	13,148	+ 54%
Lawrence Township	8,860	10,317	11,272	12,776	14,650	+ 65%
Perry Township	8,441	9,791	10,468	11,653	12,799	+ 52%
Pike Township	9,479	11,202	12,561	14,078	16,259	+ 72%
Washington Township	10,492	12,306	13,545	15,315	17,132	+ 63%
Wayne Township	7,433	8,748	9,266	10,256	11,119	+ 50%
Marion County	7,677	9,002	9,765	10,942	12,212	+ 59%

Figure 1

WARREN TOWNSHIP POPULATION DISTRIBUTION

BY AGE COHORTS, 1960 – 1980

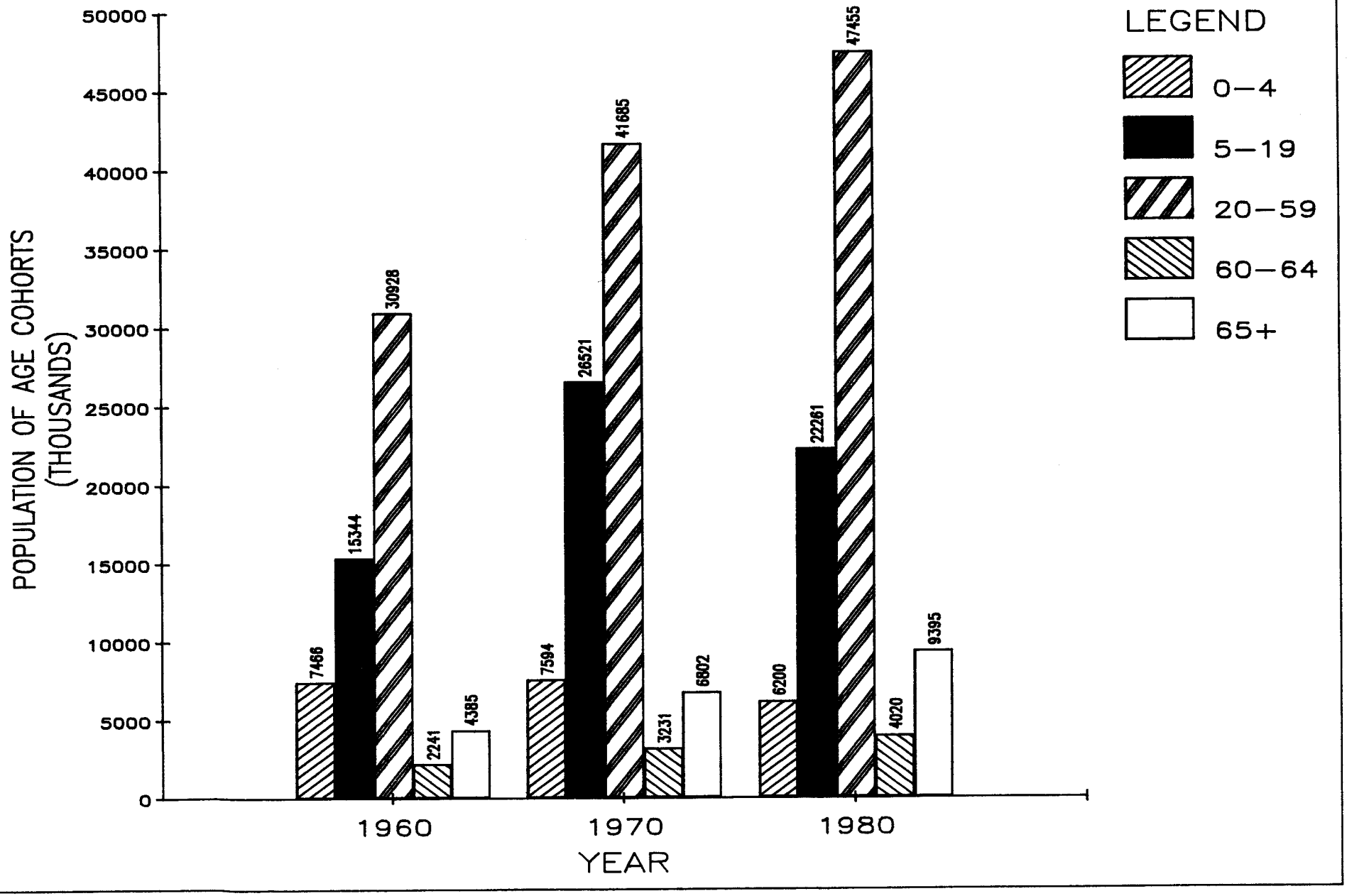
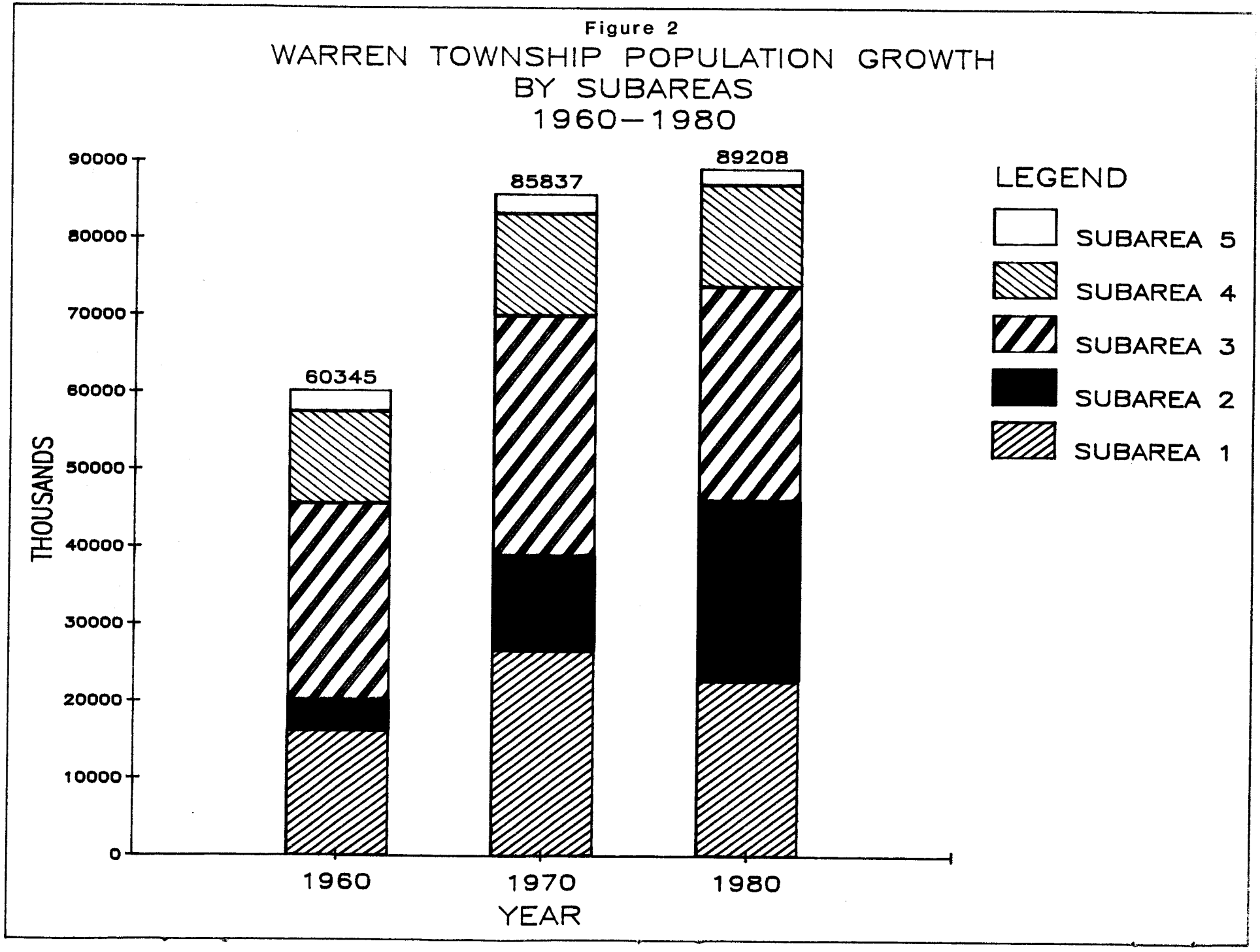


Figure 2


WARREN TOWNSHIP POPULATION GROWTH
BY SUBAREAS
1960—1980
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
THOUSANDS
60345
85837
89208
1960
1970
1980
YEAR
LEGEND
SUBAREA 5
SUBAREA 4
SUBAREA 3
SUBAREA 2
SUBAREA 1

First, the number of preschool-age children remained relatively stable from 1960 to 1980. The number of children age 5 to 19 increased substantially from 1960 to 1970 (from 15,344 to 26,521), before declining somewhat in 1980 to 22,261. Meanwhile, the population age 20 to 59 (considered to represent the bulk of the working population) increased from 30,928 to 47,455 during the 1960-1980 period, an increase of more than 50%. The population growth of those age 60 to 64 and those age 65 and over was slightly more dramatic--both cohort populations doubled during the 1960-1980 period.

Racial Composition

The racial composition and distribution within Warren Township has changed somewhat between 1960 and 1980. In 1960, about one percent of the township population was black; and it was fairly evenly distributed between the five subareas, as none were more than 2% black. By 1980, 8% of the total township population was black. Most of this increase occurred in Subarea 1 (28% black) and in Subarea 2 (9% black). Together, these two subareas accounted for over 90% of Warren Township's black population in 1980.

Education

The level of completed education attained by Warren Township's residents of at least 25 years of age is increasing (see Table 2 and Figure 3). Compared to Marion County, Warren has a slightly higher percentage of residents who have either completed high school, attended some college, or graduated from college (71% vs. 67%). Correspondingly, it has lower percentages of residents who have either never attended high school, or who never completed high school (29% vs. Marion County's 33%).

The percentage of the township population 25 years old and over which has completed at least one to three years of college is increasing (see Figure 3). The percentage which had completed at least one year of college, but not more than three years, increased from 12% in 1960 to 15% in 1980. Likewise, the percentage of those who completed a minimum of four years of college has increased from 9% to 13%. (It should be noted, however, that this phenomenon was evident throughout Marion County).

Comparing subareas, the highest percentage of residents at least 25 years old who had completed at least four years of college by 1980 occurs in Subareas 2 and 3 (16% in each). The percentage of college graduates in these two subareas corresponds with the Marion County average of 16%, while the other three subareas had significantly lower percentages. Comparatively, the highest percentage of residents age 25 years old that had obtained no more than an elementary school education as of 1980 occurred in Subarea 5, a percentage well above the Marion County average (14.8%).

TABLE 2

LEVEL OF EDUCATION COMPLETED, WARREN TOWNSHIP 1960-1980

EDUCATION LEVEL	1960	1970	1980	(1960 %)	(1970 %)	(1980 %)	% CHANGE
ELEMENTARY							
WARREN TOWNSHIP	7940	7977	7070	23.3	16.9	13.3	-11.0
SUBAREA ONE	1387	2022	1422	17.5	16.7	11.7	2.5
SUBAREA TWO	596	762	1266	27.7	12.5	10.1	112.4
SUBAREA THREE	3218	2961	2358	20.3	14.7	12.3	-26.7
SUBAREA FOUR	1979	1845	1653	31.1	25.6	20.8	-16.5
SUBAREA FIVE	760	387	371	43.0	25.2	25.2	-51.2
MARION COUNTY	125106	94317	65588	32.1	22.5	14.8	-47.6
1-3 YEARS OF HIGH SCHOOL							
WARREN TOWNSHIP	7030	9323	8587	20.7	19.8	16.1	22.1
SUBAREA ONE	1872	2940	2418	23.6	24.3	19.8	29.2
SUBAREA TWO	509	989	1553	23.7	16.2	12.3	205.1
SUBAREA THREE	2760	3241	2666	17.5	16.1	13.9	-3.4
SUBAREA FOUR	1579	1859	1778	24.8	25.8	22.4	12.6
SUBAREA FIVE	310	294	172	17.5	19.1	11.7	-44.5
MARION COUNTY	83620	89898	78852	21.5	21.4	17.8	-5.7
4 YEARS HIGH SCHOOL							
WARREN TOWNSHIP	12013	18748	23006	35.3	39.8	43.1	91.5
SUBAREA ONE	2862	5006	5432	36.1	41.3	44.5	89.8
SUBAREA TWO	795	2617	5436	37.0	42.8	43.2	583.8
SUBAREA THREE	5759	7939	8318	36.4	39.5	43.5	44.4
SUBAREA FOUR	2057	2593	3287	32.3	36.0	41.4	59.8
SUBAREA FIVE	540	593	533	30.5	38.6	36.2	-1.3
MARION COUNTY	106910	139866	163470	27.4	33.3	36.8	52.9
1-3 YEARS COLLEGE							
WARREN TOWNSHIP	3930	5376	7932	11.6	11.4	14.9	101.8
SUBAREA ONE	1017	1257	1783	12.8	10.4	14.6	75.3
SUBAREA TWO	169	846	2317	7.9	13.8	18.4	1271.0
SUBAREA THREE	2172	2570	2824	13.7	12.8	14.8	30.0
SUBAREA FOUR	457	552	788	7.2	7.7	9.9	72.4
SUBAREA FIVE	115	151	220	6.5	9.8	14.9	91.3
MARION COUNTY	37306	44453	63558	9.6	10.6	14.3	70.4
4 OR MORE YEARS COLLEGE							
WARREN TOWNSHIP	3097	5647	6736	9.1	12.0	12.6	117.5
SUBAREA ONE	780	887	1148	9.9	7.3	9.4	47.2
SUBAREA TWO	79	899	2015	3.7	14.7	16.0	2450.6
SUBAREA THREE	1905	3402	2966	12.0	16.9	15.5	55.7
SUBAREA FOUR	289	347	429	4.5	4.8	5.4	48.4
SUBAREA FIVE	44	112	178	2.5	7.3	12.1	304.5
MARION COUNTY	33816	47931	72588	8.7	11.4	16.3	114.7

* All figures are for population 25 years old and over.

SOURCE: U.S. Census Bureau.

Figure 3

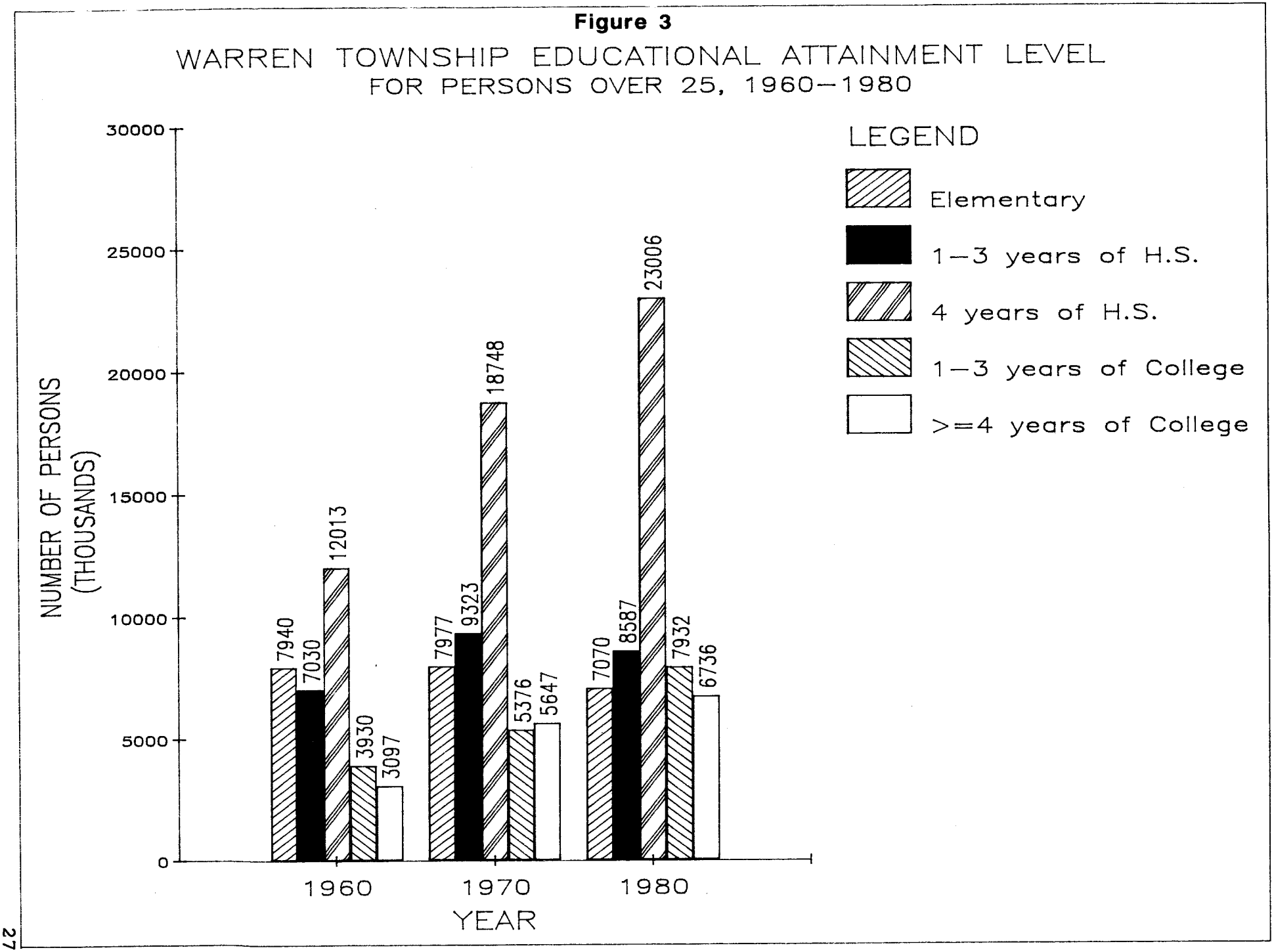
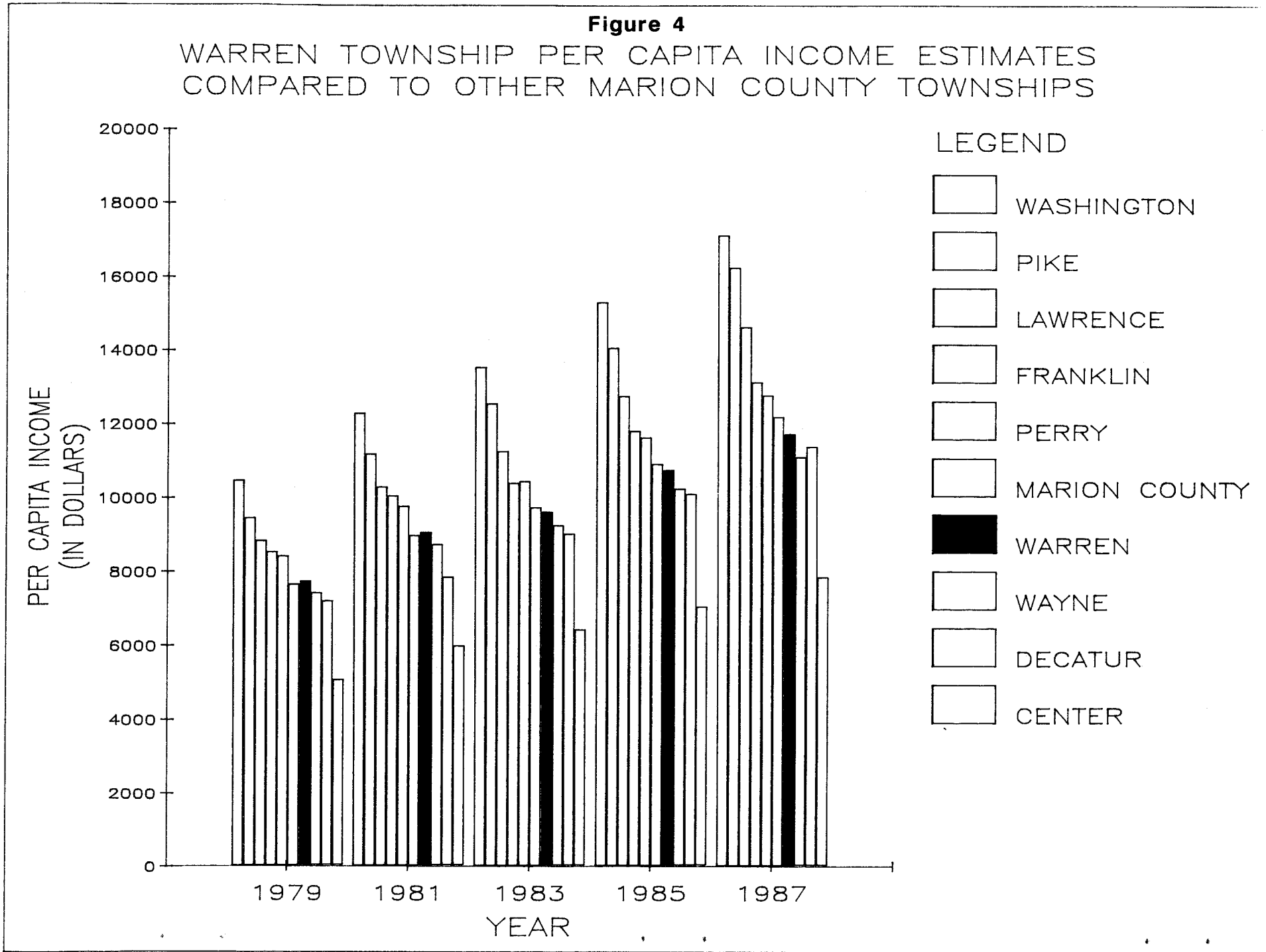

WARREN TOWNSHIP EDUCATIONAL ATTAINMENT LEVEL
FOR PERSONS OVER 25, 1960—1980
NUMBER OF PERSONS (THOUSANDS)
30000
25000
20000
15000
10000
5000
0
7940
7030
12013
3930
3097
7977
9323
18748
5376
5647
7070
8587
23006
7932
6736
1960
1970
1980
YEAR
LEGEND
Elementary
1—3 years of H.S.
4 years of H.S.
1—3 years of College
>=4 years of College

Figure 4


WARREN TOWNSHIP PER CAPITA INCOME ESTIMATES
COMPARED TO OTHER MARION COUNTY TOWNSHIPS
PER CAPITA INCOME
(IN DOLLARS)
20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
1979
1981
1983
1985
1987
YEAR
LEGEND
WASHINGTON
PIKE
LAWRENCE
FRANKLIN
PERRY
MARION COUNTY
WARREN
WAYNE
DECATUR
CENTER

Income

Between 1979 and 1987, the average per capita income of Warren Township residents has remained nearly identical to that of all Marion County residents (see Figure 4). For the period, the U.S. Census Bureau's estimates for average annual per capita income show a 52% increase for Warren Township residents, compared with a 59% increase for the county. Warren ranks sixth among Marion County's nine townships in per capita income.

HOUSING

Steady residential growth has been the general pattern in all eight outlying townships since the population of central Indianapolis began dispersing to the less developed areas of the county during the 1950s and '60s. In the 1970s and '80s, Warren Township's rate slowed moderately. From 1960 to 1970, the number of housing units increased by 8,571 (from 18,925 to 27,496), a 45% increase. The growth between 1970 and 1980 amounted to an additional 6,926 units (from 27,496 to 34,422), for a 25% increase. There has been an additional 7% increase since 1980.

In 1970, multi-family housing comprised 14% of all housing in the township. By 1980, that share had increased significantly to 28% of all units. At the end of 1989, multi-family housing had increased to 30% of the total. On a countywide level, multi-family housing increased from 23% in 1970 to 38% of all housing by 1987.

During the period from 1980 through 1989, Subarea 2 attracted over two-thirds of the new housing units constructed within the township, though this subarea comprises only one-fourth of the total land in Warren Township.

Mobile home units constitute less than 3% of all housing units in Warren Township. Of the five townships that have mobile homes, Warren ranks fourth based on share of total units. Nearly all of the mobile home parks in Warren Township are located near I-465 between East Washington Street and Brookville Road.

TABLE 3
WARREN TOWNSHIP HOUSING UNIT SUMMARY

	SUB AREA1	SUB AREA2	SUB AREA3	SUB AREA4	SUB AREA5	TOWNSHIP TOTAL
SINGLE FAMILY						
1960	4318	1166	7459	3757	379	17,079
1970	6051	3148	8284	4080	482	22,045
1980	5710	4417	8168	4399	637	23,331
1987	5685	4913	8231	4404	709	23,942
1988	5678	4979	8228	4408	773	24,066
1989	5675	5133	8235	4415	844	24,288
DOUBLE						
1960	342	13	265	101	5	726
1970	404	63	729	331	11	1,538
1980	408	103	617	233	9	1,370
1987	410	107	697	236	9	1,450
1988	410	107	715	238	9	1,479
1989	410	107	759	238	9	1,523
MULTIFAMILY						
1960	171	9	839	93	0	1,112
1970	1255	298	2257	103	0	3,913
1980	1998	4435	3024	224	0	9,681
1987	2028	5365	3140	477	0	11,010
1988	2028	5365	3140	477	0	11,010
1989	2028	5485	3140	477	0	11,130
TOTAL UNITS						
1960	4831	1188	8563	3951	384	18,925
1970	7710	3509	11270	4510	493	27,496
1980	8116	8995	11809	4856	646	34,422
1987	8123	10385	12068	5117	718	36,411
1988	8116	10451	12083	5123	782	36,555
1989	8113	10725	12134	5116	853	36,941

CHAPTER 3

WARREN TOWNSHIP LAND USE INVENTORY CHANGES, 1973-1989

TOWNSHIP CHANGES

A principal measure of development in any geographic area is the degree of changes in the mix and spatial distribution of different land uses. For comparison purposes, all of Warren Township's various land uses were grouped into the following categories:

VACANT LAND

RESIDENTIAL LAND
- Very Low Density
- Low Density
- Medium Density

COMMERCIAL LAND
- Office
- Retail

INDUSTRIAL LAND
- Light
- Heavy

PUBLIC & SEMI-PUBLIC LAND
- Special Uses
- Streets
- Public Parks

Maps were prepared for existing land uses, zoned land, and planned land uses for the years 1973 and 1989. The year 1973 was compared with 1989 primarily because aerial photographs are available for 1973. The existing land uses for 1989 were determined using more recent aerial photos (1985 and 1986) and field checks. The result is a direct comparison of actual land use and zoning at two moments in time, 1973 and 1989, and a comparison of those with the land use recommendations of the 1984 Comprehensive Plan. (For zoning comparisons, see Chapter 4; for 1984 Comprehensive Plan comparisons, see Chapter 5.) The following is a brief summary of the principal land use changes that took place during the period.

Vacant Land

Vacant land for the purpose of this study includes idle land and land which is used agriculturally. Vacant land in 1973 constituted over 55% of the total land area in the township (16,772 acres). Over the next sixteen years, more than 2,200 acres of this land was developed, resulting in a slightly lower percentage of total vacant land area in 1989--48%. The net change is a 13% decrease in the number of acres classified as vacant in Warren Township between 1973 and 1989.

Residential Land

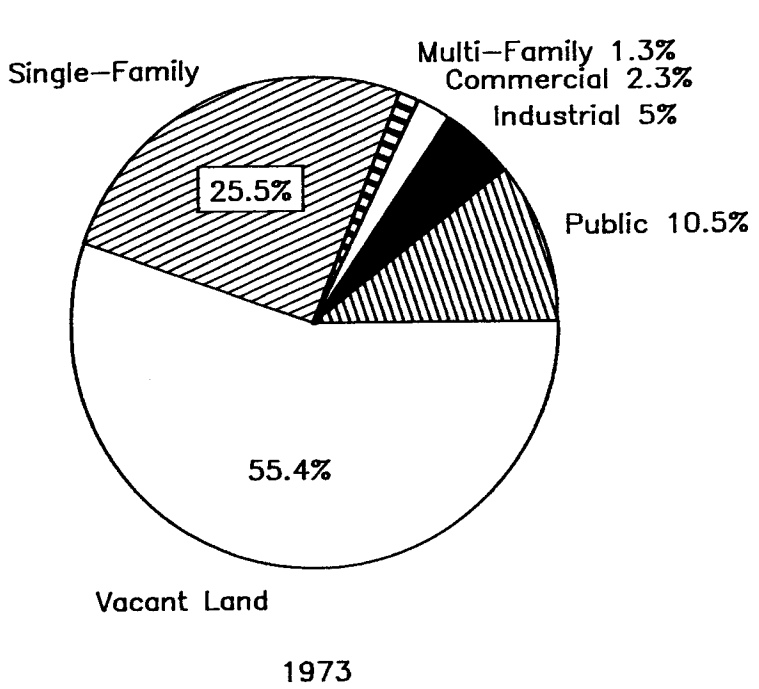
Between 1973 and 1989, residential land use increased by 865 acres (11%), from approximately 8,122 acres in 1973 to 8,987

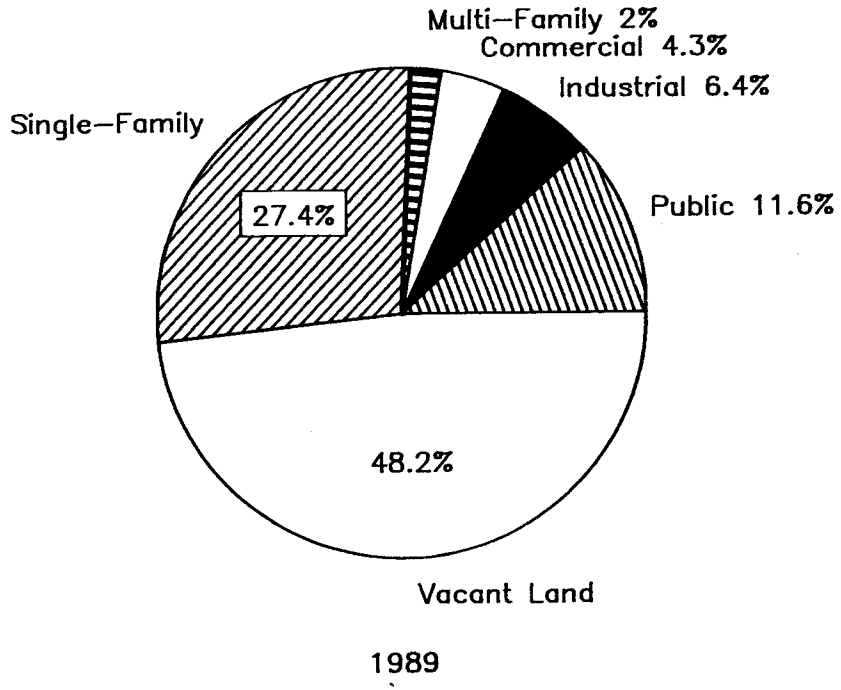
TABLE 4
WARREN TOWNSHIP LAND USE
1973-1989
(ACRES)

LAND USE	1973	1989	% OF 1973	% OF 1989	ABSOLUTE CHANGE	% CHANGE
1. RESIDENTIAL						
a. Very Low Density	1834.0	1989.3	6.1	6.6	155.3	8.5
b. Low Density	5884.1	6378.3	19.4	21.1	494.1	8.4
c. Medium Density	403.8	619.3	1.3	2.0	215.5	53.4
Subtotal	8121.9	8986.8	26.8	29.7	864.9	10.6
2. COMMERCIAL						
a. Office	60.0	101.0	0.2	0.3	41.0	68.3
b. Retail	634.0	1197.5	2.1	4.0	563.5	88.9
Subtotal	694.0	1298.5	2.3	4.3	604.5	87.1
3. INDUSTRIAL						
a. Light	404.0	616.8	1.3	2.0	212.8	52.7
b. Heavy	1103.0	1332.3	3.6	4.4	229.3	20.8
Subtotal	1507.0	1949.0	5.0	6.4	442.0	29.3
4. PUBLIC & SEMI-PUBLIC						
a. Special Uses	1109.8	1300.5	3.7	4.3	190.8	17.2
b. Streets	1880.9	1896.4	6.2	6.3	15.5	0.8
c. Public Parks	195.0	310.0	0.6	1.0	115.0	59.0
Subtotal	3185.6	3506.9	10.5	11.6	321.3	10.1
5. VACANT LANDS						
Acres in Township	30280.0	30280.0	100.0	100.0		
-Land Used 1-4	13508.5	15741.2	44.6	52.0	2232.7	16.5
Vacant Land	16771.6	14538.9	55.4	48.0	-2232.7	-13.3

Figure 5

WARREN TOWNSHIP
1973–1989 LAND USE TOTALS





acres in 1989. In 1973, residential land use accounted for almost 27% of the total township land area; by 1989 that share had increased to nearly 30%. The majority of this residential increase is attributable to low density (typically small lot single-family) development, which gained 494 acres (an 8% increase) during the period. The largest percentage increase, however, occurred with medium density development (apartments, condominiums, and some mobile home parks). Medium density residential development gained approximately 216 acres for a 53% increase.

Commercial Land

The change in the amount of land developed and used for commercial purposes was more dramatic than that experienced in the residential land use category. Land devoted to retail commercial uses increased by nearly 89% from 634 acres in 1973 to 1,198 acres in 1989. Developed office acreage increased from 60 to 101 acres (68%). Commercial land accounted for a little over 2% of the township's total acreage in 1973. By 1989, however, that percentage had nearly doubled to over 4%.

Industrial Land

Industrial land use also experienced substantial gains in terms of developed acreage--29% more land was developed industrially in 1989 than in 1973. Light industrial land uses accounted for roughly half of that increase, with 213 more acres in 1989. Land devoted to heavy industrial uses gained 229 acres (21%). Industrial land use as a percentage of the township's total land acreage increased from 5% to over 6%.

Public and Semi-Public Land

Land used for public and semi-public purposes increased by about 10% between 1973 and 1989. There was essentially no change in the amount of land used for streets (about 1,900 acres). The amount of land devoted to public parks increased by 115 acres (59%). Other public and semi-public uses (e.g., churches, schools, and power substations) increased by 17% from 1,110 acres in 1973 to 1,301 acres in 1989. This increased the public and semi-public land category's overall percentage share of Warren Township's total acreage from 11% in 1973 to 12% in 1989 (about a 10% gain).

Summary

Warren Township has experienced continued development in all land use categories during the period from 1973 to 1989. Over 2,200 acres of previously vacant land were developed for either residential, commercial, industrial, or public uses during the

sixteen-year period. The following observations summarize Warren Township's land use changes during the past sixteen years:

- The largest absolute change from vacant land was attributed to residential land development (an 865-acre increase);
- Commercial retail development experienced the highest rate of growth (89%);
- Appreciable gains in public and semi-public land resulted largely from the construction of new schools and churches; a new park was also developed;
- Vacant land still accounts for approximately 48% of the township total.

SUBAREA LAND USE CHANGES

Warren Township has been divided into five geographic subareas to provide additional detail to this analysis. The subareas differ quite substantially in terms of their land use characteristics. While all five subareas are dominated by residential land uses, the amount and mix of single-family, multi-family, public, commercial, and industrial land varies considerably. For example, industrial land is scarcely present in three subareas but fairly prominent in the other two. Similarly, multi-family development constitutes a fair portion of the residentially used land in two subareas, but very little or none of the residentially used land in the others.

Subarea 1

Subarea 1 constitutes the northwest quadrant of Warren Township, and it includes a part of the I-70 corridor. It totals 4,954 acres. In 1973 nearly 32% of this area was vacant (1,578 acres), but by 1989 developed acreage in the township had increased by 12%, thereby reducing the amount of vacant land to 1,175 acres, or 24% of the total. Most of the change resulted from industrial development (from 642 acres in 1973 to 872 acres in 1989, for a 36% increase). Commercial development grew at an even faster rate. Office development remained practically nonexistent (only about 14 acres developed); retail development, however, added 81 acres to an existing 1973 base of 198 acres, a 41% increase. Overall, acreage devoted to commercial uses increased by 38% between 1973 and 1989.

The amount of land devoted to residential uses remained relatively constant during the sixteen-year period, growing by less than 2%. A little more than one-third of the subarea is

developed residentially. Land acreage developed for public and semi-public uses increased by a total of 11% due to the construction of new churches, school additions, and a new public park (Wes Montgomery). Less than one-quarter of the land in Subarea 1 remains vacant.

Subarea 2

The northeastern one-quarter of Warren Township makes up Subarea 2. It includes the remainder of the I-70 corridor, Washington Square, and Cumberland. It extends south to the abandoned Conrail railroad right-of-way, and west to Post Road. This subarea has experienced the bulk of Warren Township's development since 1973 (more than one-third of all land developed in Warren Township between 1973 and 1989 is in Subarea 2). As a result, vacant land decreased significantly, from approximately 4,200 acres in 1973 to slightly more than 3,300 acres in 1989.

Most of the land is developed residentially (460 acres). Single-family homes and duplexes accounted for most of that acreage, but land development for multi-family use occurred at a higher rate (nearly a 78% increase). Commercial development added 293 acres to a 1973 base of 48 acres for an enormous 616% increase. Nearly all of the commercial development was retail in nature, as it accounted for more than 95% of that growth (280 acres). The industrial land development rate for Subarea 2 was less dramatic than the rate for commercial, but it was still significantly high (a 162% increase). Most of that development was in light industry (43 acres); heavy industrial land increased by only six acres. A modest 7% increase in the number of acres devoted to public and semi-public uses resulted primarily from the development of 37 acres for special uses other than public parks or streets and 35 acres for a new public park. Subarea 2 still had nearly one-half of its land undeveloped by July of 1989.

Subarea 3

Subarea 3 is the most developed of the subareas. In 1973 only 20% of the subarea's acreage was vacant, and by 1989 that figure had dropped to 13%. Of the 299 acres developed since 1973, most were developed commercially (142 acres), resulting in a 38% increase in the number of acres devoted to that use. Retail uses accounted for most of the absolute acreage (116 of the 142 acres developed), but office development occurred at the higher rate (a 63% increase).

In terms of absolute acreage, the amount of industrial development in Subarea 3 remained fairly low (113 acres), with no net change since 1973. Residential development, however, occurred on approximately 114 acres, with 71% of that (81 acres) accounted for by multi-family development. As a result, the

amount of land in the subarea devoted to residential uses increased by 4%. This low rate is due to the fact that the subarea began the study period with a large base (2,630 acres) of residential development. Public and semi-public lands increased slightly (7% for the period).

Subarea 4

Subarea 4 represents the southwestern quarter of the township, with Post Road and the abandoned railroad corridor serving as its eastern and northern boundaries, respectively. Land development in this subarea was added fairly evenly between residential (85 additional acres), commercial (87 additional acres), industrial (150 additional acres), and public uses (45 additional acres). The greatest percentage increase took place in the commercial land category (161%). By 1989, however, commercial land still accounted for less than 2% of all land in the subarea.

Subarea 4 has the township's second highest percentage of industrial land, with 11% of its total acreage devoted to that use in 1989. That figure reflects an increase of 2% over the past sixteen years, as 150 more acres were developed industrially.

Residentially, Subarea 4 saw very little change from 1973, with only a 5% increase in land acreage developed for that use. Lower density residential development (single-family) contributed most to that increase, but multi-family development occurred at a significantly higher rate (48%).

The increase in the amount of land dedicated to public and semi-public uses corresponds closely to the rate of increase for the entire township. Public park land, however, remains conspicuously absent from Subarea 4. Nearly 55% of the subarea remained undeveloped in 1989.

Subarea 5

Four and one-half percent of Subarea 5 was developed after 1973, with residential and public/semi-public land use categories playing significant parts. A total of 175 acres were developed for residential use, resulting in a fairly high 46% increase in that land use's share of the subarea's total acreage. Meanwhile, 85 acres were developed for public and semi-public uses, including 39 acres for a park. Commercially developed land is practically nonexistent in this subarea, with only four acres devoted to commercial uses.

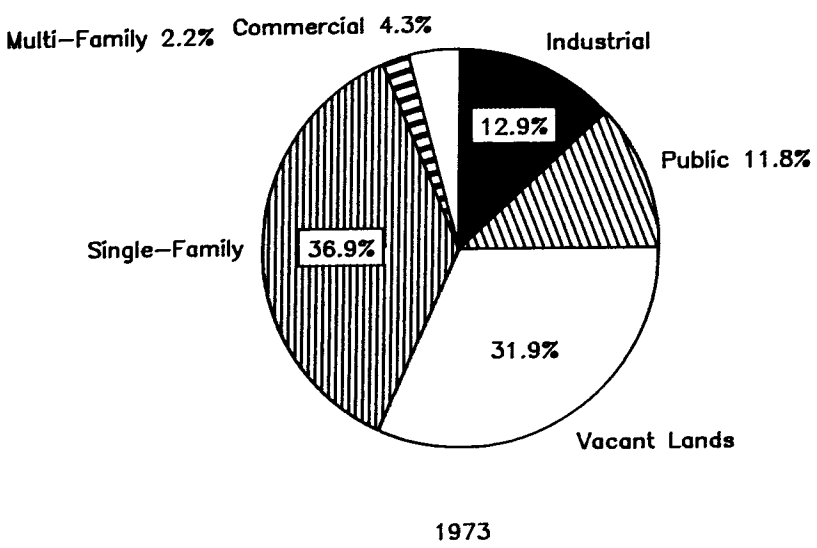
The greatest percentage increase occurred with industrially used land. About 11 acres were developed and added to an existing base of about 16 acres for a 74% gain. As of mid-1989, more than 86% of Subarea 5 remained undeveloped.

TABLE 5
WARREN TOWNSHIP LAND USE
SUBAREA ONE 1973-89
(ACRES)

LAND USE	1973	1989	% OF 1973	% OF 1989	ABSOLUTE CHANGE	% CHANGE	
1. RESIDENTIAL							
a. Very Low & Low Den	1828.5	1857.5	36.9	37.5	29.0	1.6	4954.0
b. Medium Density	110.0	111.5	2.2	2.3	1.5	1.4	4954.0
Subtotal	1938.5	1969.0	39.1	39.7	30.5	1.6	4954.0
2. COMMERCIAL							
a. Office	14.5	14.4	0.3	0.3	-0.1	-0.7	4954.0
b. Retail	198.3	279.3	4.0	5.6	81.0	40.9	4954.0
Subtotal	212.8	293.7	4.3	5.9	80.9	38.0	4954.0
3. INDUSTRIAL							
a. Light	127.0	240.0	2.6	4.8	113.0	89.0	4954.0
b. Heavy	514.5	632.0	10.4	12.8	117.5	22.8	4954.0
Subtotal	641.5	872.0	12.9	17.6	230.5	35.9	4954.0
4. PUBLIC & SEMI-PUBLIC							
a. Special Uses	100.0	127.5	2.0	2.6	27.5	27.5	4954.0
b. Streets	458.0	458.0	9.2	9.2	0.0	0.0	4954.0
c. Public Parks	25.0	59.0	0.5	1.2	34.0	136.0	4954.0
Subtotal	583.0	644.5	11.8	13.0	61.5	10.5	4954.0
5. VACANT LANDS							
Acres in Subarea	4954.0	4954.0					
-Land Used 1-4	3375.8	3779.2	68.1	76.3	403.4	11.9	4954.0
Vacant Land	1578.3	1174.9	31.9	23.7	-403.4	-25.6	4954.0

Figure 6

WARREN TOWNSHIP
SUBAREA ONE LAND USE 1973–1989



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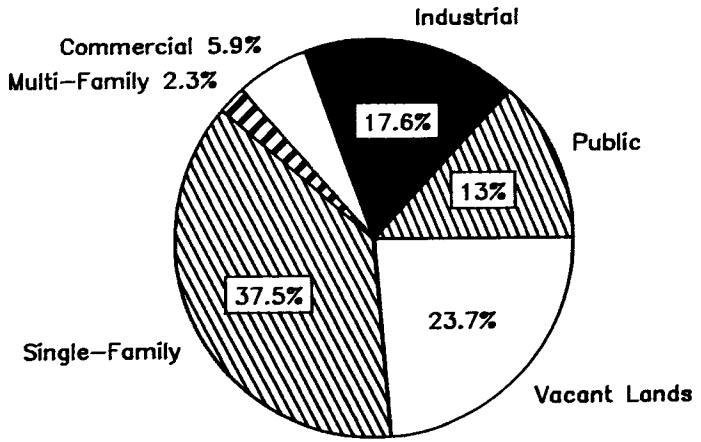


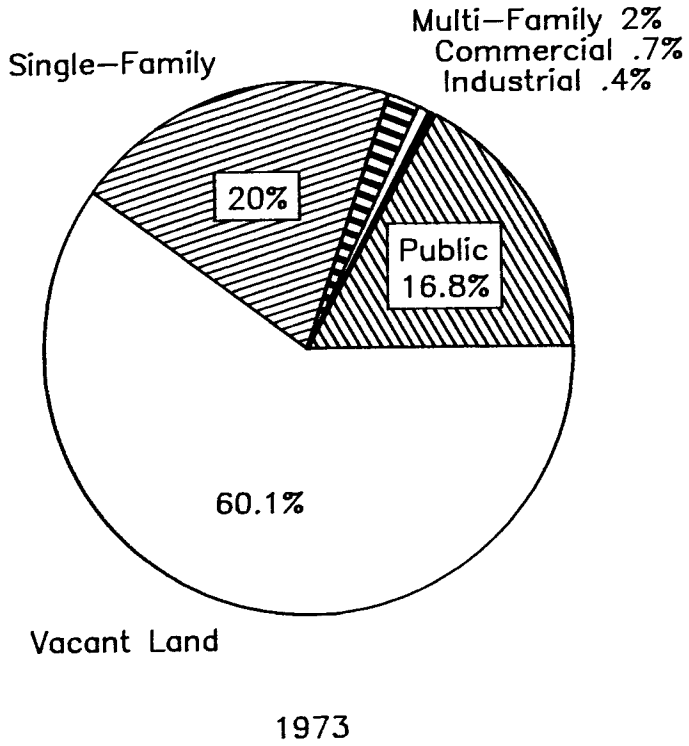
1989

TABLE 6
WARREN TOWNSHIP LAND USE
SUBAREA TWO 1973-89
(ACRES)

LAND USE	1973	1989	% OF 1973	% OF 1989	ABSOLUTE CHANGE	% CHANGE
1. RESIDENTIAL						
a. Very Low & Low Den	1403.5	1756.5	20.0	25.0	353.0	25.2
b. Medium Density	137.5	244.5	2.0	3.5	107.0	77.8
Subtotal	1541.0	2001.0	21.9	28.5	460.0	29.9
2. COMMERCIAL						
a. Office	1.5	13.8	0.0	0.2	12.3	816.7
b. Retail	46.0	326.5	0.7	4.6	280.5	609.8
Subtotal	47.5	340.3	0.7	4.8	292.8	616.3
3. INDUSTRIAL						
a. Light	9.5	53.0	0.1	0.8	43.5	457.9
b. Heavy	21.0	27.0	0.3	0.4	6.0	28.6
Subtotal	30.5	80.0	0.4	1.1	49.5	162.3
4. PUBLIC & SEMI-PUBLIC						
a. Special Uses	581.0	617.5	8.3	8.8	36.5	6.3
b. Streets	601.0	616.5	8.6	8.8	15.5	2.6
c. Public Parks	0.0	34.5	0.0	0.5	34.5	---
Subtotal	1182.0	1268.5	16.8	18.1	86.5	7.3
5. VACANT LANDS						
Acres in Subarea	7026.0	7026.0				
-Land Used 1-4	2801.0	3689.8	39.9	52.5	888.8	31.7
Vacant Land	4225.0	3336.3	60.1	47.5	-888.8	-21.0

Figure 7

WARREN TOWNSHIP
SUBAREA TWO LAND USE 1973–1989



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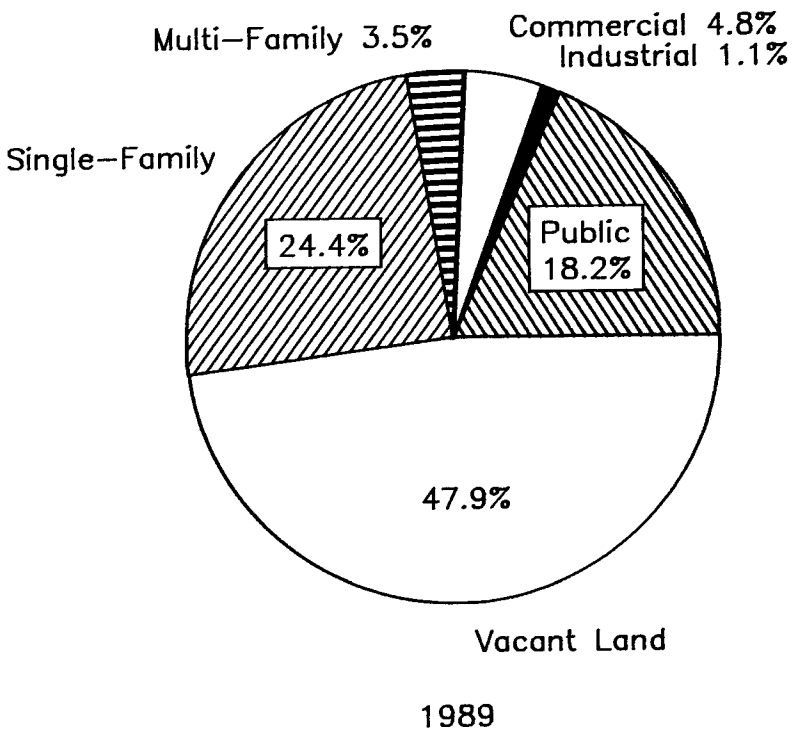


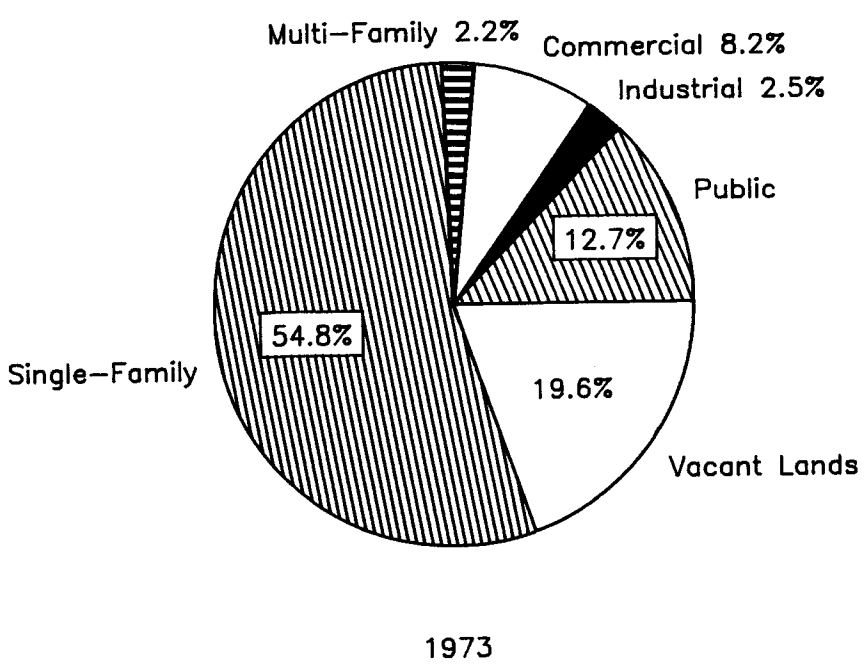
1989

TABLE 7
WARREN TOWNSHIP LAND USE
SUBAREA THREE 1973-89
(ACRES)

LAND USE	1973	1989	% OF 1973	% OF 1989	ABSOLUTE CHANGE	% CHANGE
1. RESIDENTIAL						
a. Very Low & Low Den	2529.1	2562.5	54.8	55.6	33.4	1.3
b. Medium Density	101.3	182.0	2.2	3.9	80.8	79.8
Subtotal	2630.4	2744.5	57.0	59.5	114.2	4.3
2. COMMERCIAL						
a. Office	42.0	68.5	0.9	1.5	26.5	63.1
b. Retail	336.5	452.3	7.3	9.8	115.8	34.4
Subtotal	378.5	520.8	8.2	11.3	142.3	37.6
3. INDUSTRIAL						
a. Light	113.0	113.0	2.5	2.5	0.0	0.0
b. Heavy	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal	113.0	113.0	2.5	2.5	0.0	0.0
4. PUBLIC & SEMI-PUBLIC						
a. Special Uses	170.8	206.3	3.7	4.5	35.5	20.8
b. Streets	246.3	246.3	5.3	5.3	0.0	0.0
c. Public Parks	170.0	177.5	3.7	3.8	7.5	4.4
Subtotal	587.1	630.1	12.7	13.7	43.0	7.3
5. VACANT LANDS						
Acres in Subarea	4611.0	4611.0				
-Land Used 1-4	3708.9	4008.3	80.4	86.9	299.4	8.1
Vacant Land	902.1	602.7	19.6	13.1	-299.4	-33.2

Figure 8

WARREN TOWNSHIP
SUBAREA THREE LAND USE 1973–1989



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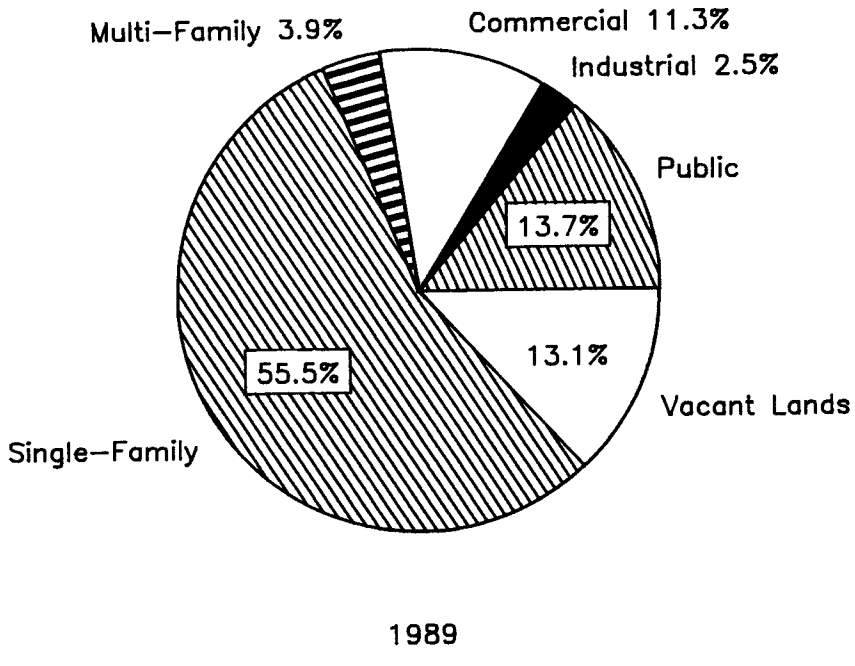


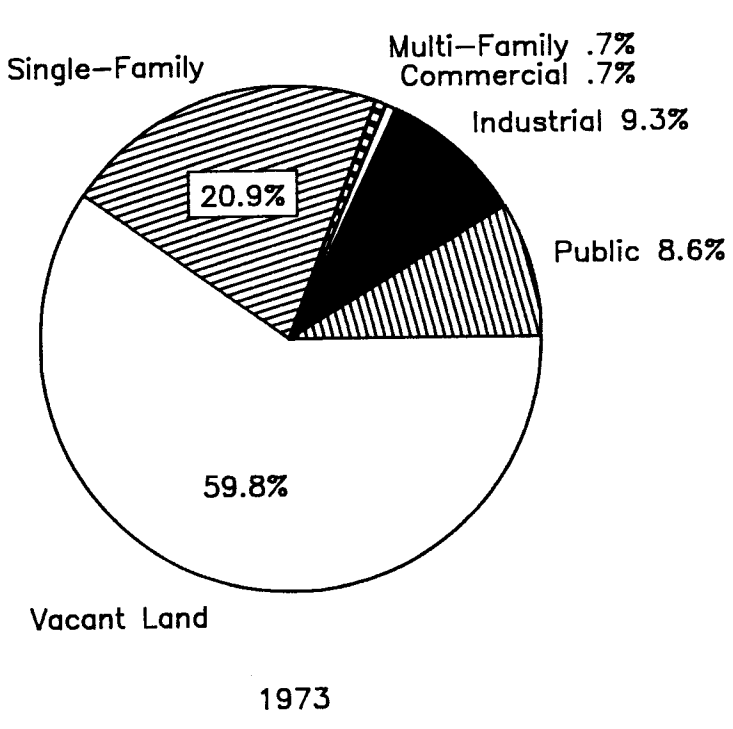
1989

TABLE 8
WARREN TOWNSHIP LAND USE
SUBAREA FOUR 1973-89
(ACRES)

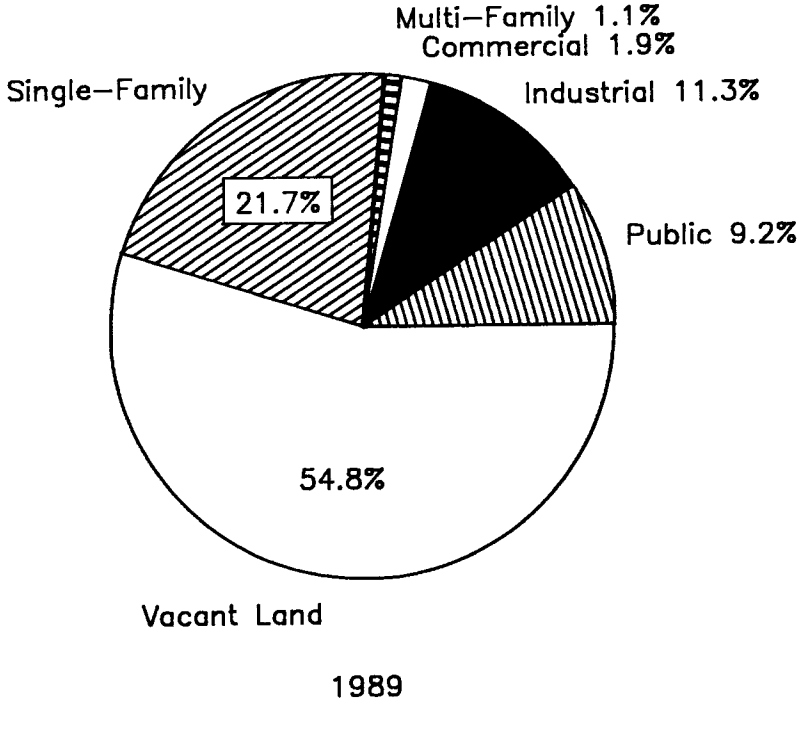
LAND USE	1973	1989	% OF 1973	% OF 1989	ABSOLUTE CHANGE	% CHANGE
1. RESIDENTIAL						
a. Very Low & Low Den	1578.5	1637.5	20.9	21.7	59.0	3.7
b. Medium Density	55.0	81.5	0.7	1.1	26.5	48.2
Subtotal	1633.5	1718.8	21.6	22.7	85.3	5.2
2. COMMERCIAL						
a. Office	2.0	3.3	0.0	0.0	1.3	62.5
b. Retail	52.0	137.5	0.7	1.8	85.5	164.4
Subtotal	54.0	140.8	0.7	1.9	86.8	160.6
3. INDUSTRIAL						
a. Light	146.0	194.3	1.9	2.6	48.3	33.0
b. Heavy	560.5	662.3	7.4	8.8	101.8	18.2
Subtotal	706.5	856.5	9.3	11.3	150.0	21.2
4. PUBLIC & SEMI-PUBLIC						
a. Special Uses	168.0	213.3	2.2	2.8	45.3	26.9
b. Streets	484.0	484.0	6.4	6.4	0.0	0.0
c. Public Parks	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal	652.0	697.3	8.6	9.2	45.3	6.9
5. VACANT LANDS						
Acres in Subarea	7563.0	7563.0				
-Land Used 1-4	3046.0	3413.3	40.3	45.1	367.3	12.1
Vacant Land	4517.0	4149.8	59.7	54.9	-367.3	-8.1

Figure 9

WARREN TOWNSHIP
SUBAREA FOUR LAND USE 1973–1989



1973



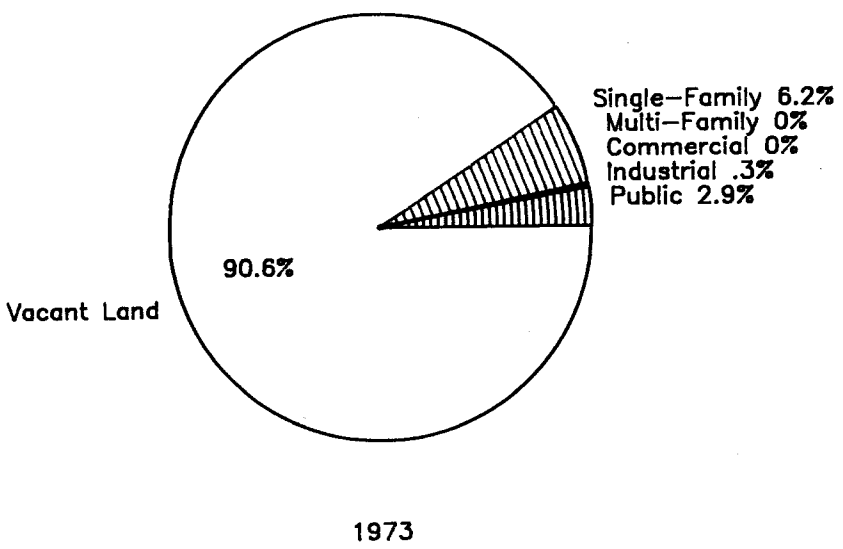
1989

TABLE 9
WARREN TOWNSHIP LAND USE
SUBAREA FIVE 1973-89
(ACRES)

LAND USE	1973	1989	% OF 1973	% OF 1989	ABSOLUTE CHANGE	% CHANGE
1. RESIDENTIAL						
a. Very Low & Low Den	378.5	553.5	6.2	9.0	175.0	46.2
b. Medium Density	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal	378.5	553.5	6.2	9.0	175.0	46.2
2. COMMERCIAL						
a. Office	0.0	1.0	0.0	0.0	1.0	100.0
b. Retail	1.3	3.0	0.0	0.0	1.8	140.0
Subtotal	1.3	4.0	0.0	0.1	2.8	220.0
3. INDUSTRIAL						
a. Light	8.5	16.0	0.1	0.3	7.5	88.2
b. Heavy	7.0	11.0	0.1	0.2	4.0	57.1
Subtotal	15.5	27.0	0.3	0.4	11.5	74.2
4. PUBLIC & SEMI-PUBLIC						
a. Special Uses	84.0	130.0	1.4	2.1	46.0	54.8
b. Streets	91.5	91.5	1.5	1.5	0.0	0.0
c. Public Parks	0.0	39.0	0.0	0.6	39.0	---
Subtotal	175.5	260.5	2.9	4.3	85.0	48.4
5. VACANT LANDS						
Acres in Subarea	6126.0	6126.0				
-Land Used 1-4	570.8	845.0	9.3	13.8	274.3	48.1
Vacant Land	5555.2	5281.0	90.7	86.2	-274.2	-4.9

Figure 10

WARREN TOWNSHIP
SUBAREA FIVE LAND USE 1973–1989



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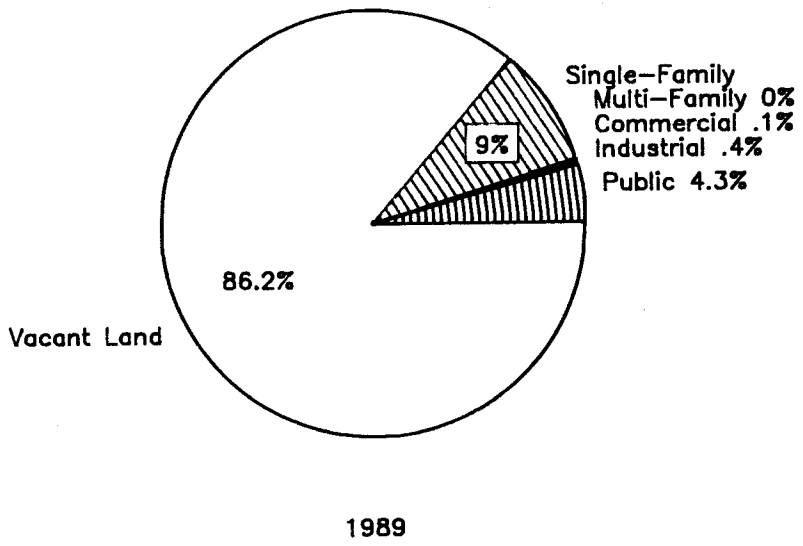


1989

CHAPTER 4

WARREN TOWNSHIP ZONING CHANGES, 1973-1989

One way to monitor the type and direction of an area's future development is to examine zoning changes that have taken place over time. Zoning changes in Warren Township were studied for the years 1973 through 1989. This sixteen-year period was chosen because it is large enough to include numerous zoning changes, yet small enough that it would not likely include many second and third rezoning of properties. It also corresponds with the time period for the inventory of land use changes. The following classifications for land uses were utilized.

RESIDENTIAL CATEGORY - The residential category was separated into two subcategories according to density:

1. Single-Family - This subcategory includes those single-family units with typical densities ranging from one to five units per acre. Properties zoned D-S, D-1, D-2, D-3, D-4, and D-5 are included.

2. Multi-Family - This subcategory includes all apartment buildings, all mobile home parks, and some condominium complexes. Typical densities range between five and 15 units per acre. Zoning districts D-6, D-6-II, D-7, D-11, D-12, and some D-Ps are included in the category.

COMMERCIAL CATEGORY - The commercial category has also been divided into two subcategories:

1. Office - Office districts permit buildings and associated property where recordkeeping, clerical work, or administrative and professional activities are generally transacted, and where the general public's rights and access are restricted. The zoning districts included in this subcategory are C-1, C-2, and C-S.

2. Retail - Retail districts permit buildings and associated property where goods are sold to the ultimate consumer and where public access is generally unrestricted. This subcategory includes the C-3 through C-7 zoning districts.

INDUSTRIAL CATEGORY - The industrial category was separated into light and heavy industrial subcategories:

1. Light Industrial - Light industrial uses are completely contained in an enclosed building and have very limited outside storage of raw material, equipment or manufactured products. Districts I-1-S, I-2-S, and I-2-U are included in this subcategory. CID's (Commercial - Industrial Districts) are also included.

2. Heavy Industrial - Heavy industrial uses are those manufacturing, processing, warehousing, and distribution activities which require buildings and open areas for their activities and which have a greater nuisance factor than light industrial uses. Districts I-3-S, I-3-U, I-4-S, I-4-U, I-5-S, and I-5-U are classified as heavy industrial.

PUBLIC CATEGORY - The public category was divided into two subcategories: parks and special uses.

1. Parks - Parkland is included in this subcategory. The primary park district (PK-1) permits all sizes and ranges of public parkland and facilities.

2. Special uses - These districts include land activities that have characteristics of operation which do not readily permit classification in the usual residential, commercial, or industrial districts. They are necessary to the livability and economic health of the community but their specific control is also needed. Special uses include churches, schools, hospitals, airports, power substations, and other uses.

AGRICULTURAL CATEGORY - The agricultural category includes the A-1 and A-2 zoning districts, for outlying or undeveloped areas of the county. These districts were revised to the D-A zoning district in November 1989. The majority of Warren Township's A-1 and A-2 zoning was located in such areas before the change to D-A zoning. Because compiling of zoning data occurred prior to the change in zoning, this Data Inventory bases its agricultural zoning data on the A-1 and A-2 districts.

WARREN TOWNSHIP ZONING CHANGES

Residential Category

During the sixteen-year period from 1973 to 1989, residentially zoned areas in Warren Township increased by only 188 acres, a 2% increase. In both 1973 and 1989, residential zoning districts accounted for about 36% of the township's total land area. The very low density and low density residential districts increased by 92 and 39 acres, respectively, from the 1973 figures of 1,644 and 7,928. In terms of relative gains, the acreage rezoned to very low density residential zoning districts substantially outpaced the amount rezoned to the low density.

Medium density residentially zoned acreage accounted for 4% of all land in Warren Township in 1973. By 1989 that figure had not changed, as medium density residential zoning districts gained only 57 acres by 1989.

Commercial Category

Land zoned for commercial purposes increased by 1,024 acres, from 1,221 acres in 1973 to 2,245 acres in 1989. As a result of this 84% increase, the category's percentage share of all township land increased from 4% to 7%.

More acreage was zoned for retail use than for office, 872 to 152, respectively. Retail zoning increased from 1,046 acres in 1973 to 1,918 acres in 1989, an 83% increase for the period. Office zoning accounted for only 175 acres (0.6% of the township's total land area) in 1973, but by 1989 grew by 87% to 327 acres, slightly over 1% of the township total.

Industrial Category

The amount of land zoned for industrial use decreased by 4%, from 4,000 acres in 1973 to 3,860 acres in 1989. Most of that decrease stemmed from an 8% decrease in the number of acres zoned for light industry. The acres of land zoned for general industry decreased by 2% over the period, from 2,672 acres to 2,632 acres.

The share of total land zoned for light industry decreased from 4.4% to 4.1%, helping to push the percentage share for all industrially zoned land to under 13% of all township land.

Public Category

Publicly and semi-publicly zoned lands accounted for 2,031 acres in 1973 (7% of total land). By 1989 this number had increased to 2,719 acres (9%), resulting in a 34% overall increase in acres zoned for public or semi-public use. Much of this increase is attributed to public parks: 210 acres were rezoned to park zoning designations. Over the same period, 477 acres were added to the land zoned for special uses--a 26% increase for that subcategory.

Agricultural Category

Agriculturally zoned lands in Warren Township declined by 14% between 1973 and 1989. During the period, 1,760 acres of land zoned for agricultural uses (either A-1 or A-2) were rezoned to nonagricultural categories. Whereas 41% of the township was agriculturally zoned in 1973, only 35% of the township remained so in 1989.

Zoning Change Summary

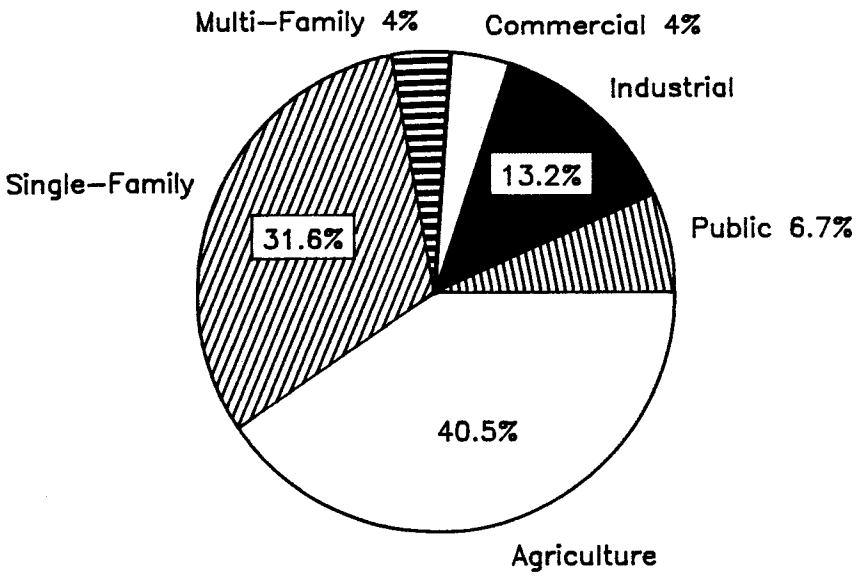
Warren Township has experienced continued development since 1973. About 1,900 acres of agriculturally and industrially zoned land was converted to either residential, commercial, or public and semi-public zoning categories over the sixteen-year period.

TABLE 10
WARREN TOWNSHIP ZONING CHANGES
1973-1989
(ACRES)

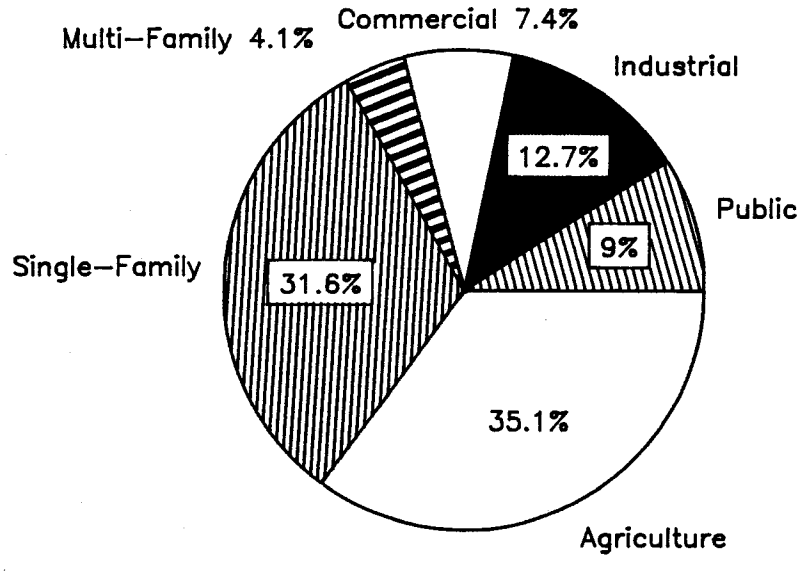
ZONING TYPES	1973	1989	% OF 1973	% OF 1989	ABSOLUTE CHANGE	% CHANGE
1. RESIDENTIAL						
a. Very Low Density	1644.0	1735.8	5.4	5.7	91.8	5.6
b. Low Density	7927.9	7967.2	26.2	26.3	39.3	0.5
c. Medium Density	1199.3	1256.5	4.0	4.1	57.2	4.8
Subtotal	10771.2	10959.5	35.6	36.2	188.3	1.7
2. COMMERCIAL						
a. Office	175.0	327.3	0.6	1.1	152.3	87.0
b. Retail	1046.3	1917.8	3.5	6.3	871.5	83.3
Subtotal	1221.3	2245.0	4.0	7.4	1023.8	83.8
3. INDUSTRIAL						
a. Light	1328.5	1228.0	4.4	4.1	-100.5	-7.6
b. General	2671.8	2631.5	8.8	8.7	-40.3	-1.5
Subtotal	4000.3	3859.5	13.2	12.7	-140.8	-3.5
4. PUBLIC & SEMI-PUBLIC						
a. Special Uses	1828.8	2306.0	6.0	7.6	477.3	26.1
b. Public Parks	202.2	412.5	0.7	1.4	210.3	104.0
Subtotal	2031.0	2718.5	6.7	9.0	687.5	33.9
5. AGRICULTURE	12257.0	10497.6	40.5	34.7	-1759.4	-14.4
TOTAL	30280.6	30280.0				

Figure 11

WARREN TOWNSHIP
1973–1989 ZONING TOTALS



1973



1989

The following key observations summarize the zoning changes that have occurred in Warren Township since 1973:

* Residentially zoned acreage increased by only 2%, adding 188 acres.

* Land zoned for office use increased by 87%.

* Land zoned for retail commercial use increased by 872 acres (an 83% increase).

* Industrially zoned acreage decreased by 4% (141 acres).

* Public and semi-public land grew by 688 acres, or 34%.

* Agriculturally zoned lands decreased by 1,759 acres (a 14% decrease).

SUBAREA ZONING CHANGES

Subarea 1

Of Warren Township's five subareas, Subarea 1 lost the third largest amount of agriculturally zoned land to other zoning districts. Between 1973 and 1989, 143 acres were rezoned: 152 acres were rezoned to commercial districts and 79 acres to public and semi-public districts. Agriculturally zoned land comprised 5% of the subarea's total land area in 1989, compared with 8% in 1973.

Of the residential zoning districts, the smallest number of acres changed were in low density zoning districts (25 acres), resulting in a 1% decrease in the total number of acres in Subarea 1 zoned for low density development. In addition, the number of acres zoned for medium density residential development decreased by 20%. More absolute acres were rezoned to other zoning categories from this zoning category, even though in 1973 it accounted for such a small share of the subarea's total acreage (3%). As of 1989, land zoned for low density and medium density residential development accounted for 42% and 3%, respectively, of the subarea's total land acreage. There is no very low density residential zoning in Subarea 1.

By 1989, nearly 152 acres of commercially zoned land was added to that which existed in 1973. Of the 152 acres rezoned during that period, 9 acres were zoned for office use and 143 acres were zoned for retail activity. Office-zoned lands made up only 0.9% of the subarea's total acreage in 1973, and by 1989 it had increased only slightly to 1.1%.

Of the two industrial zoning subcategories, light industry experienced the most change, a decrease of 20 acres for a 4% loss. Land zoned for general industrial uses also declined over the period, from 1,053 acres to 1,043 acres.

Public and semi-public uses made up 9% of the subarea's total acreage in 1989. Special uses increased by 12% in the sixteen-year period beginning in 1973, while park zoning more than doubled, increasing by 156%.

Subarea 2

The highest number of acres rezoned from agricultural districts to nonagricultural districts (799 acres) was in Subarea 2, which led to a 28% decrease in agriculturally zoned land. Nearly all of this land was converted to residential, commercial, or public and semi-public zoning. In addition, 94 acres zoned for industrial uses in 1973 were converted to either residential, commercial, or public and semi-public zoning by 1989.

Most of the residentially zoned acres added during the period were for low density development (145 acres), while acres zoned for very low density development actually decreased by 59 (a decrease of 15.3%). The percentage of total subarea acreage zoned for low density residential use increased from 25% in 1973 to 27% in 1989. Meanwhile, 63 acres were added to the medium density acreage, a 9% increase.

An additional 578 acres zoned for commercial use since 1973 constituted a 255% increase for that category in Subarea 2. Of that additional acreage, 474 were zoned for retail use, more than doubling that subcategory's total retail acreage and share of the subarea's total acreage. The 103 additional acres zoned for office use represented a 393% increase for that subcategory, and the subarea share of office acreage increased to 2%.

Industrially zoned land in Subarea 2 decreased by 20% (94 acres) over the last sixteen years. Specifically, 87 acres of light industrially zoned land were zoned to other zoning categories and 8 acres of general industrially zoned land were also rezoned. Land zoned for light industry now accounts for less than 1% of Subarea 2 and land zoned for general industry still accounts for about 4%.

A net total of 129 acres were converted to special uses, and 37 acres were added to the public parks category. The net change in acres zoned for public or semi-public use therefore is 166.3 acres, translating to a 24% increase for the category.

Subarea 3

The lowest total of agriculturally zoned acreage is found in Subarea 3--only 120 acres in 1989, almost identical to 1973. The residential and general industrial zoning categories lost acreage. This resulted in a decrease of 5% and 18% in the number of acres zoned for residential and general industrial uses, respectively. Nearly all of this land (177 acres) was converted to commercial, light industrial, medium density residential, agricultural, or public and semi-public zoning.

Of the residential zoning category, 177 acres were rezoned from the very low and low density residential districts to other zoning districts, and 2 acres were added to the medium density district. The net change for the residential category in Subarea 3 therefore was 175 acres, representing a decrease of 5%.

Commercially zoned lands in Subarea 3 increased by a total of 123 acres (24%). Most of this gain is the result of a 112-acre increase in land zoned for retail use. Acreage zoned for office use increased by 11 acres, amounting to a 12% increase for that subcategory, compared with the 26% increase in acreage zoned for retail use.

Industrially zoned land in Subarea 3 remained relatively constant over the last sixteen years, with a net increase of only 2 acres. The loss in the general industrial category was compensated for by an increase in the light industrial category of 3 acres. Although the general industrial category experienced a decrease of 18%, the percentage of that category in Subarea 3 did not change significantly--there were only 6 acres of general industry in 1973. Land zoned for light industry also held stable between 1973 and 1989 at about 4% of the total subarea.

A total of 41 acres were converted to special uses, and 8 acres were added to the public parks category. The net change in acres zoned for public or semi-public use therefore is 49 acres, translating to a 13% addition for the category.

Subarea 4

This subarea had the second highest total of acres zoned for agriculture, at 3,356 acres. This was the result of a correspondingly high 1973 total of agriculturally zoned land and a net change of only 397 acres from agricultural to other zoning categories. The only other zoning category that had a decrease in acreage was the low density residential zoning category, which lost 12 acres. These changes resulted in additions to the very low density and medium density residential, commercial, industrial, and public and semi-public zoning categories.

Although the low density zoning category experienced a decrease of acres during the study period, Subarea 4 had a net increase of 18 acres zoned for residential uses. Most of this increase (28 acres) was in the medium density zoning districts, which experienced a 25% change.

By 1989, 173 acres of commercially zoned land was added to that which existed in 1973. Of the 173 acres rezoned during that period, 31 acres were zoned for office use and 142 acres were zoned for retail activity.

The two industrial zoning subcategories experienced nearly the same amount of change: an increase of 20 acres in each, reflected in a 6% increase in light industrial, and a 2% increase in general industrial.

Public and semi-public zoning categories had an overall increase of 149 acres from the 1973 total of 372 acres, resulting in 521 total acres devoted to these zoning categories. Special uses zoning increased by 63 acres (16.9%), while public parks zoning increased by 87 acres. The substantial change in public parks zoning from the 2 acres in 1973 resulted in a seemingly disproportionate percentage change by 1989.

Subarea 5

In Subarea 5, 435.5 fewer acres of agriculturally zoned land existed in 1989 than in 1973. There were also 59 fewer industrially zoned acres in 1989. Overall, residential, commercial, and public and semi-public zoning districts increased by 495 acres, with gains of 240, 2, and 253 acres, respectively. As of 1989, 78% of the subarea remained zoned for agricultural use, a higher percentage than any other subarea.

Of the residential zoning category, 3 acres were rezoned from the medium density residential districts to other zoning districts, and 149 and 94 acres were added to the very low and low density districts, respectively. Therefore, the net change for the residential category was 240 acres, representing an increase of 105% in Subarea 5.

Commercially zoned lands in Subarea 5 increased by a total of 2 acres. Land zoned for commercial uses, however, still occupies only 7% of the land in the subarea.

Industrially zoned land in Subarea 5 decreased by 12% over the last sixteen years, with a net decrease of 59 acres. The decrease in the general industrial category was 44 acres (13%), while the decrease in the light industrial category was almost 16 acres (10%).

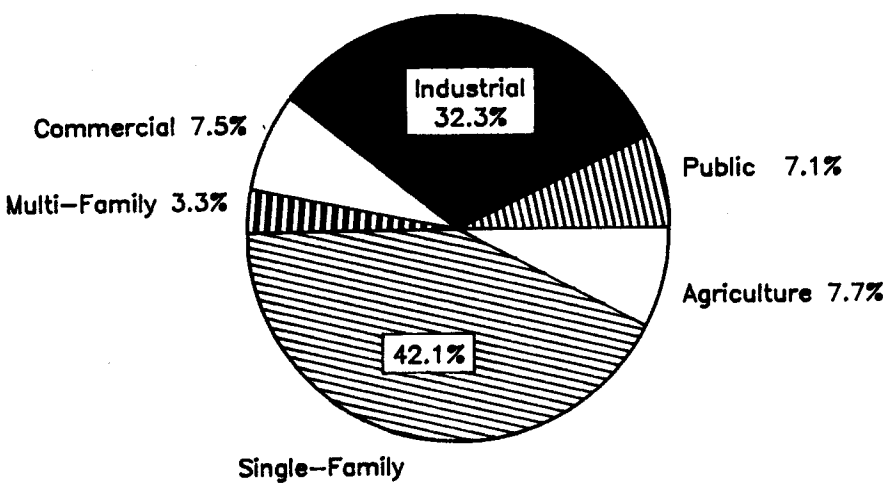
A total of 253 acres were converted to public and semi-public zoning, a 148% increase from 1973 to 1989. This increase was distributed between the special uses and public parks categories with increases of 214 acres and 39 acres, respectively.

TABLE 11
WARREN TOWNSHIP ZONING CHANGES
SUBAREA ONE 1973-1989
(ACRES)

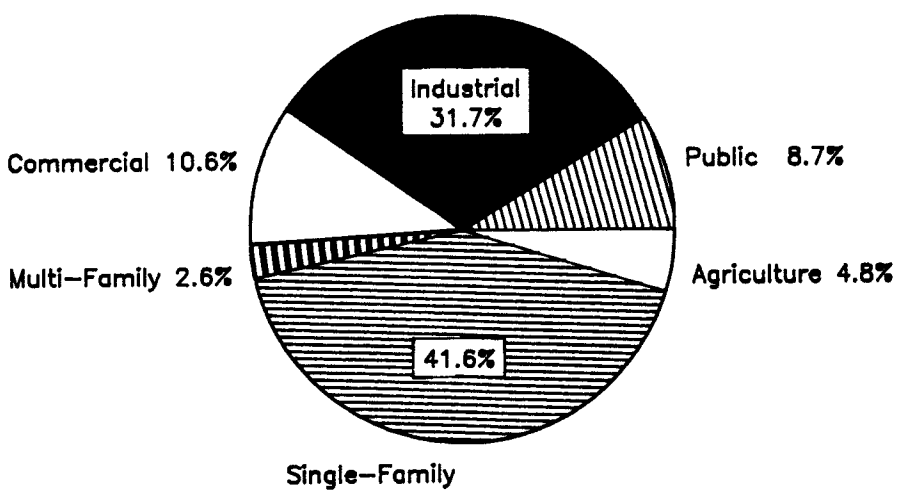
ZONING TYPES	1973	1989	% OF 1973	% OF 1989	ABSOLUTE CHANGE	% CHANGE
1. RESIDENTIAL						
a. Very Low Density	0.0	0.0	0.0	0.0	0.0	0.0
b. Low Density	2085.0	2059.8	42.1	41.6	-25.3	-1.2
c. Medium Density	164.3	131.3	3.3	2.7	-33.0	-20.1
Subtotal	2249.3	2191.0	45.4	44.3	-58.3	-2.6
2. COMMERCIAL						
a. Office	43.3	52.0	0.9	1.1	8.8	20.2
b. Retail	329.3	472.3	6.6	9.5	143.0	43.4
Subtotal	372.5	524.3	7.5	10.6	151.8	40.7
3. INDUSTRIAL						
a. Light	546.0	526.0	11.0	10.6	-20.0	-3.7
b. General	1053.3	1043.3	21.3	21.1	-10.0	-0.9
Subtotal	1599.3	1569.3	32.3	31.7	-30.0	-1.9
4. PUBLIC & SEMI-PUBLIC						
a. Special Uses	327.0	367.3	6.6	7.4	40.3	12.3
b. Public Parks	25.0	64.0	0.5	1.3	39.0	156.0
Subtotal	352.0	431.3	7.1	8.7	79.3	22.5
5. AGRICULTURE	381.5	238.8	7.7	4.8	-142.8	-37.4
TOTAL	4954.5	4954.5				

Figure 12

WARREN TOWNSHIP
SUBAREA ONE ZONING 1973–1989



1973



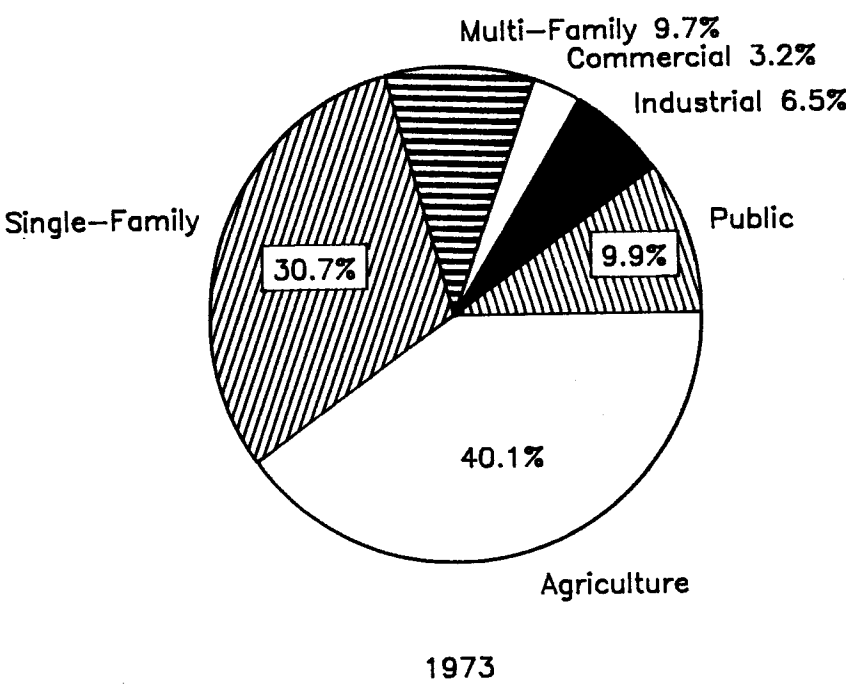
1989

TABLE 12
WARREN TOWNSHIP ZONING CHANGES
SUBAREA TWO 1973-1989
(ACRES)

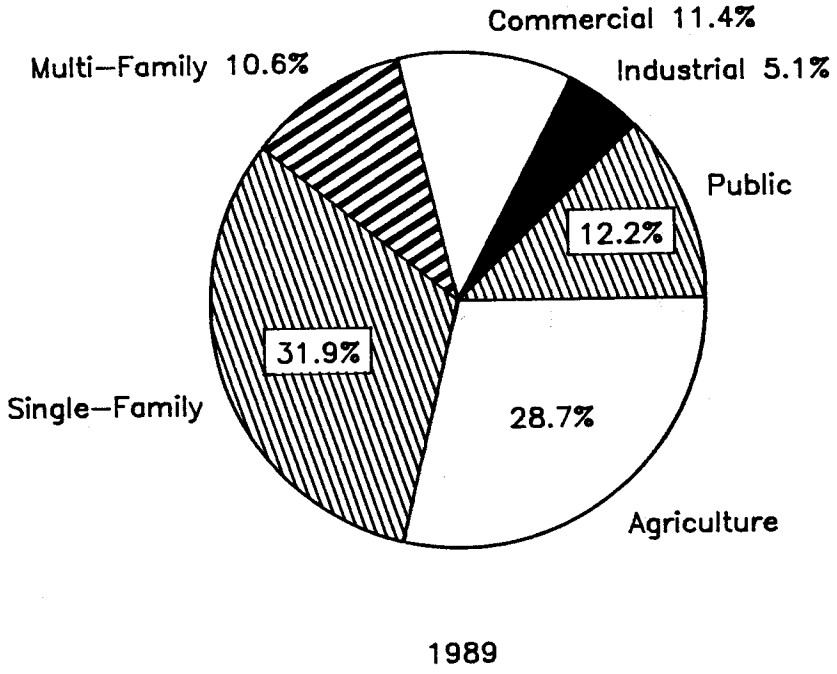
ZONING TYPES	1973	1989	% OF 1973	% OF 1989	ABSOLUTE CHANGE	% CHANGE
1. RESIDENTIAL						
a. Very Low Density	384.7	326.0	5.5	4.6	-58.7	-15.3
b. Low Density	1769.1	1914.0	25.2	27.2	144.9	8.2
c. Medium Density	682.8	746.0	9.7	10.6	63.3	9.3
Subtotal	2836.6	2986.0	40.4	42.5	149.5	5.3
2. COMMERCIAL						
a. Office	26.3	129.5	0.4	1.8	103.3	393.3
b. Retail	200.0	674.3	2.8	9.6	474.3	237.1
Subtotal	226.3	803.8	3.2	11.4	577.5	255.2
3. INDUSTRIAL						
a. Light	152.3	65.8	2.2	0.9	-86.5	-56.8
b. General	303.0	295.5	4.3	4.2	-7.5	-2.5
Subtotal	455.3	361.3	6.5	5.1	-94.0	-20.6
4. PUBLIC & SEMI-PUBLIC						
a. Special Uses	686.8	815.8	9.8	11.6	129.0	18.8
b. Public Parks	5.5	42.8	0.1	0.6	37.3	677.3
Subtotal	692.3	858.5	9.9	12.2	166.3	24.0
5. AGRICULTURE	2815.8	2016.5	40.1	28.7	-799.2	-28.4
TOTAL	7026.0	7026.0				

Figure 13

WARREN TOWNSHIP
SUBAREA TWO ZONING 1973–1989



1973



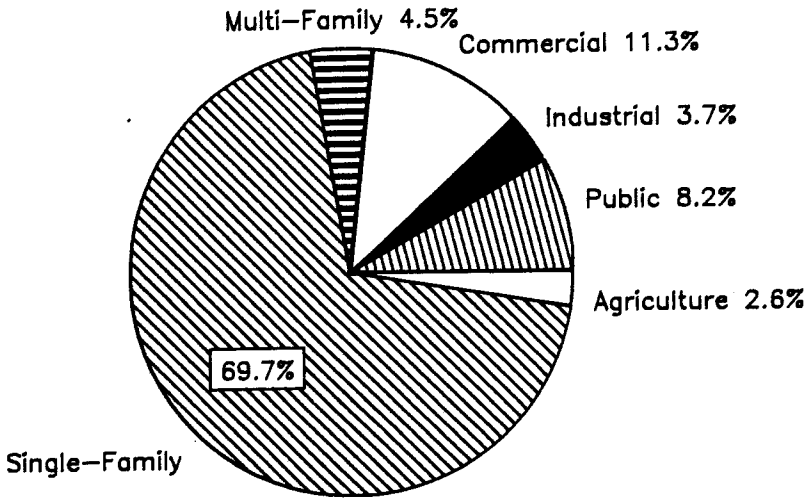
1989

TABLE 13
WARREN TOWNSHIP ZONING CHANGES
SUBAREA THREE 1973-1989
(ACRES)

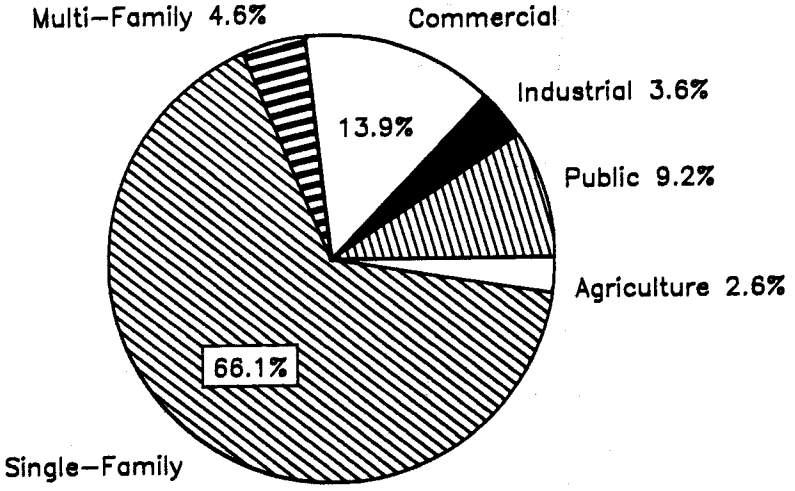
ZONING TYPES	1973	1989	% OF 1973	% OF 1989	ABSOLUTE CHANGE	% CHANGE
1. RESIDENTIAL						
a. Very Low Density	197.5	196.8	4.3	4.3	-0.8	-0.4
b. Low Density	3020.8	2844.8	65.5	61.7	-176.1	-5.8
b. Medium Density	208.3	210.5	4.5	4.6	2.3	1.1
Subtotal	3426.6	3252.0	74.3	70.5	-174.6	-5.0
2. COMMERCIAL						
a. Office	88.5	99.5	1.9	2.2	11.0	12.4
b. Retail	432.0	543.5	9.4	11.8	111.5	25.8
Subtotal	520.5	643.0	11.3	13.9	122.5	23.5
3. INDUSTRIAL						
a. Light	163.3	166.3	3.5	3.6	3.0	1.8
b. General	5.5	4.5	0.1	0.1	-1.0	-18.2
Subtotal	168.8	170.8	3.6	3.7	2.1	1.2
4. PUBLIC & SEMI-PUBLIC						
a. Special Uses	206.8	247.5	4.5	5.4	40.8	19.7
b. Public Parks	170.0	178.3	3.7	3.9	8.3	4.9
Subtotal	376.8	425.8	8.2	9.2	49.0	13.0
5. AGRICULTURE	118.5	119.5	2.6	2.6	1.0	0.8
TOTAL	4611.0	4611.0				

Figure 14

WARREN TOWNSHIP
SUBAREA THREE ZONING 1973–1989



1973



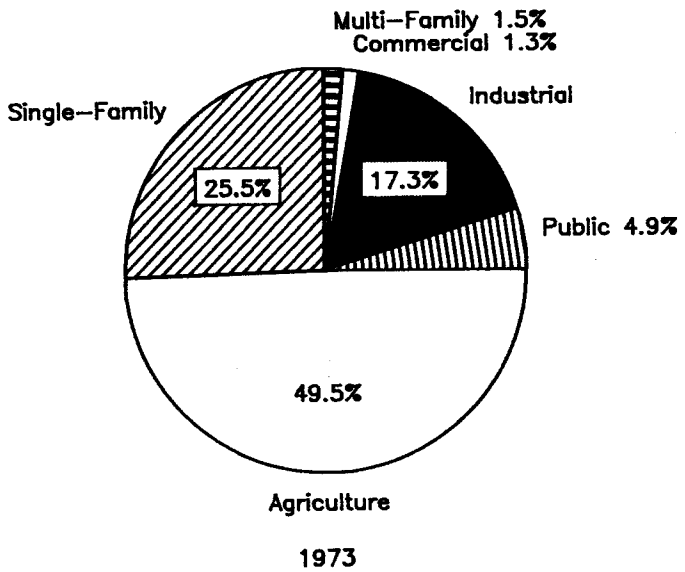
1989

TABLE 14
WARREN TOWNSHIP ZONING CHANGES
SUBAREA FOUR 1973-1989
(ACRES)

ZONING TYPES	1973	1989	% OF 1973	% OF 1989	ABSOLUTE CHANGE	% CHANGE
1. RESIDENTIAL						
a. Very Low Density	981.3	983.5	13.0	13.0	2.2	0.2
b. Low Density	952.0	940.1	12.6	12.4	-11.9	-1.2
c. Medium Density	112.1	139.8	1.5	1.8	27.8	24.8
Subtotal	2045.4	2063.4	27.0	27.3	18.1	0.9
2. COMMERCIAL						
a. Office	17.0	47.8	0.2	0.6	30.8	180.9
b. Retail	81.8	223.8	1.1	3.0	142.0	173.7
Subtotal	98.8	271.6	1.3	3.6	172.9	175.0
3. INDUSTRIAL						
a. Light	328.0	347.5	4.3	4.6	19.5	5.9
b. General	983.8	1004.0	13.0	13.3	20.3	2.1
Subtotal	1311.8	1351.5	17.3	17.9	39.8	3.0
4. PUBLIC & SEMI-PUBLIC						
a. Special Uses	370.3	432.8	4.9	5.7	62.5	16.9
b. Public Parks	1.7	88.2	0.0	1.2	86.5	5088.2
Subtotal	372.0	521.0	4.9	6.9	149.0	40.1
5. AGRICULTURE	3752.2	3355.7	49.6	44.4	-396.5	-10.6
TOTAL	7580.2	7563.0				

Figure 15

WARREN TOWNSHIP
SUBAREA FOUR ZONING 1973–1989



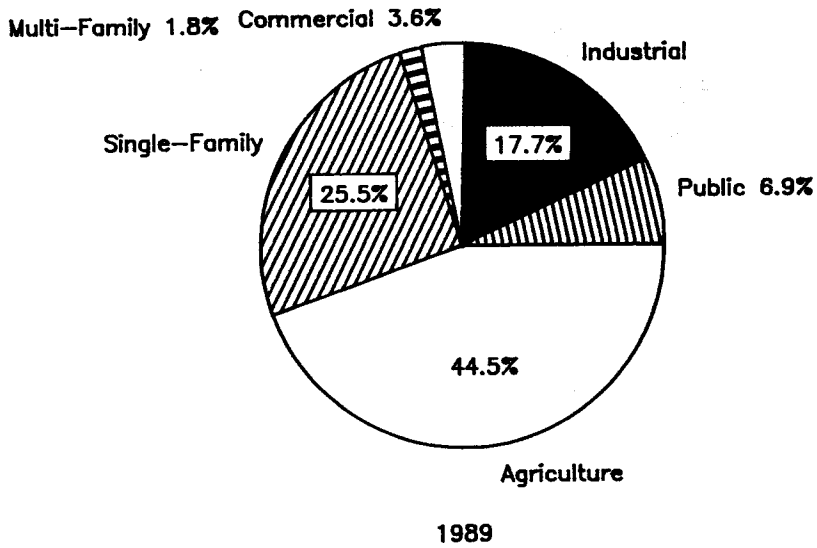
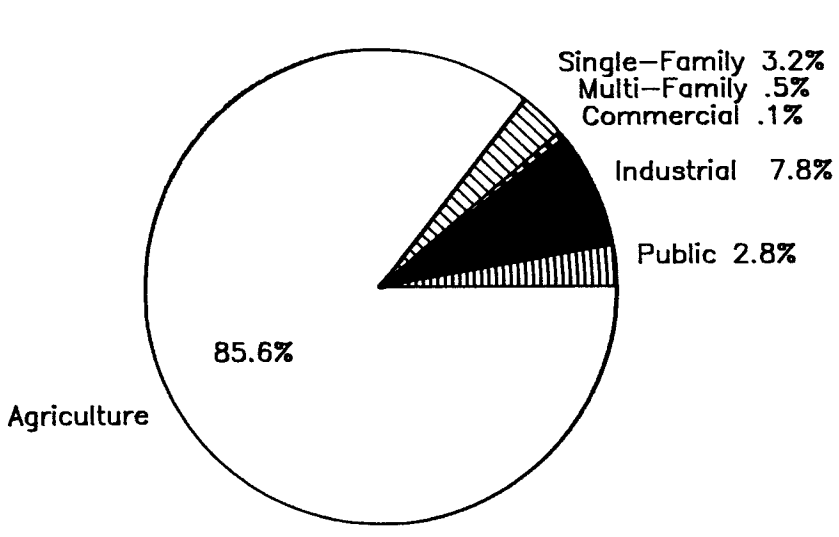


TABLE 15
WARREN TOWNSHIP ZONING CHANGES
SUBAREA FIVE 1973-1989
(ACRES)

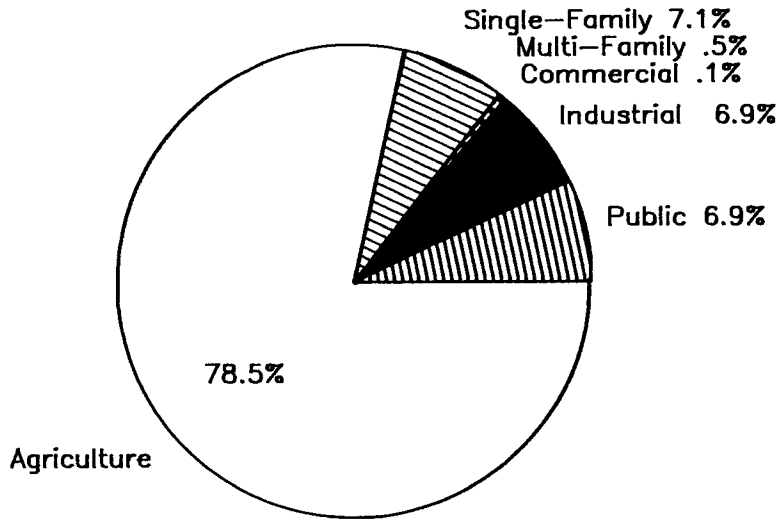
ZONING TYPES	1973	1989	% OF 1973	% OF 1989	ABSOLUTE CHANGE	% CHANGE
1. RESIDENTIAL						
a. Very Low Density	80.5	229.5	1.3	3.7	149.0	185.1
b. Low Density	115.0	208.5	1.9	3.4	93.5	81.3
c. Medium Density	32.0	29.0	0.5	0.5	-3.0	-9.4
Subtotal	227.5	467.0	3.7	7.6	239.5	105.3
2. COMMERCIAL						
a. Office	1.5	0.0	0.0	0.0	-1.5	-100.0
b. Retail	3.8	7.0	0.1	0.1	3.3	86.7
Subtotal	5.3	7.0	0.1	0.1	1.8	33.3
3. INDUSTRIAL						
a. Light	155.5	140.0	2.5	2.3	-15.5	-10.0
b. General	325.3	281.8	5.3	4.6	-43.5	-13.4
Subtotal	480.8	421.8	7.8	6.9	-59.0	-12.3
4. PUBLIC & SEMI-PUBLIC						
a. Special Uses	171.8	385.8	2.8	6.3	214.0	124.6
b. Public Parks	0.0	39.3	0.0	0.6	39.3	---
Subtotal	171.8	425.0	2.8	6.9	253.3	147.5
5. AGRICULTURE	5240.8	4805.3	85.5	78.4	-435.5	-8.3
TOTAL	6126.0	6126.0				

Figure 16

WARREN TOWNSHIP
SUBAREA FIVE ZONING 1973–1989



1973



1989

CHAPTER 5

LAND USE, ZONING, AND COMPREHENSIVE PLAN COMPARISONS

METHODOLOGY

Three files (or data bases) were utilized to obtain the data which are compared in this section. They are

1. the general land use plan from the 1984 Marion County Comprehensive Plan, which recommends a land use pattern for Warren Township when fully developed;

2. the current zoning ordinances, which indicate 1989 zoning classifications for each land parcel in the township; and

3. the land use inventory, showing the 1989 existing land uses.

The 1984 Marion County Comprehensive Plan contains a general land use plan for each township. This chapter compares the Comprehensive Plan's land use recommendations for Warren Township to the land use and zoning inventories previously discussed in this study. These comparisons will offer insight regarding the success of the general land use plan objectives.

Unfortunately, precise comparisons among the Comprehensive Plan, the zoning ordinance, and the land use inventory cannot be made because of variations in land use classifications and boundary lines. The zoning ordinance, for example, contains dwelling-agriculture districts that have some correlation to the vacant land category contained in the land use inventory. The Comprehensive Plan, however, is a policy guide that assumes full development; it contains no vacant land or agricultural categories for comparisons.

The boundary line problem principally affects the vacant land category of the land use inventory when compared to the zoning districts. Property lines generally serve as the determinant of a zoning boundary. The land use inventory was prepared from aerial photography that does not identify property lines. Therefore, the land use inventory consists of general estimates of the amount of land devoted to each use. This method tends to generate high vacant land use numbers.

Limitations are inherent in any analysis of land use employing these three information bases. It is still possible, however, to offer the generalized comparisons that follow.

Residential

In 1989, residentially developed land in Warren Township accounted for 8,987 acres, or 29% of the total township land

area. At the same time, 10,959 acres were zoned for residential purposes. So 1,972 acres zoned for residential development were not developed in 1989. The Comprehensive Plan recommends that 20,340 acres (or 67% of the township's total acreage) should ultimately be developed residentially. The plan therefore recommends over twice as much residential development as that which existed in 1989.

Acreage devoted to single-family residential use increased by 8% between 1973 and 1989. In 1989, single-family residential land uses accounted for 8,368 acres (27%) of the total township land area, while 9,703 acres (32%) of the land was zoned for very low or low density (single-family) residential uses. The Comprehensive Plan recommends the ultimate development of 17,812 acres (59% of the township) for single-family residential use. With 53% of all developed acreage now made up of single-family uses, the township's share of single-family development is only slightly behind the pace set for it in the Comprehensive Plan.

After a 53% increase between 1973 and 1989, multi-family (or medium density) residential development currently occupies less than 7% of the township's residentially developed acreage. Existing multi-family development occupies only 2% of the total land area (619 acres), while land zoned for medium density residential development accounts for 4% (1,256 acres). The Comprehensive Plan, meanwhile, calls for 2,527 acres of multi-family development, which would ultimately raise acreage for multi-family use up to 12% of all land recommended for residential development.

Commercial

Between 1973 and 1989, township land developed for commercial purposes increased by 87%, a higher percentage change than for any other land use. By 1989, 1,299 acres of land were used for commercial purposes, accounting for 4% of the land in Warren Township. According to the Comprehensive Plan, 2,138 acres should eventually be developed commercially. By 1989, 2,245 acres were already zoned for commercial use, so slightly more land in Warren Township is currently zoned for commercial use than is planned for commercial use (7.1% to 7.4%). Although the acreage for both office and retail development increased by over 65% from 1973 to 1989, current retail acreage far exceeds office acreage (1,198 acres compared to 101 acres).

Industrial

Use of Warren Township land for industry grew by 29% between 1973 and 1989. Of the 3,954 acres earmarked for industrial development by the Comprehensive Plan, about half are currently used by light and heavy industry. Land zoned for industrial use is almost equal to the amount recommended in the Comprehensive Plan, about 13% of the township's total acreage. Of the land

zoned for industrial development (3,860 acres), about one-third is zoned for light industry and two-thirds for heavy industry. Light industry currently occupies 39% (617 acres) of the acreage apportioned to it in the Comprehensive Plan (1,534 acres), while heavy industry occupies 55% (1,332 acres) of its apportioned acreage (2,420 acres).

Public and Semi-Public

This category includes public uses such as churches, schools, parks, and municipal buildings, as well as land recommended for limited development (urban conservation). The urban conservation designation is most often given to land that is within a floodplain or possesses substantial woodland areas or steep slopes. Over 900 acres are set aside for urban conservation in the Comprehensive Plan.

Of the 557 acres planned for public parks in the Comprehensive Plan, only 74% (413 acres) are zoned for public parks, and only 56% (310 acres) are currently used for that purpose. These 310 acres represent a 59% increase in land use for parks since 1973.

In terms of land use, zoning, and the Comprehensive Plan, the types of public and semi-public uses other than parks are harder to compare, due to three main reasons. First, the Comprehensive Plan does not categorize schools (other than high schools), churches, municipal properties, and some other uses under "special uses." Therefore, although these special uses sometimes occupy significant percentages of public and semi-public land, acreage of special uses cannot be effectively compared among the land use inventory, the zoning ordinance, and the Comprehensive Plan.

The second difficult area of analysis is street acreage. While a component of both the existing land use and the Comprehensive Plan, street acreage is not a component of zoning. (Zoning boundaries usually coincide with the center lines of streets.) Therefore, about 6% of the township's total acreage is not analyzed in terms of the relationship between zoning and the Comprehensive Plan or existing land use.

Third, urban conservation land, which occupies 3% of the township's total acreage in the Comprehensive Plan, is not included in either the zoning or land use totals. Thus, this category and the other problematic categories of public and semi-public land distort both absolute acreage and percentage acreage figures. With the available data, direct comparisons among land use, zoning, and the Comprehensive Plan are difficult for public and semi-public land.

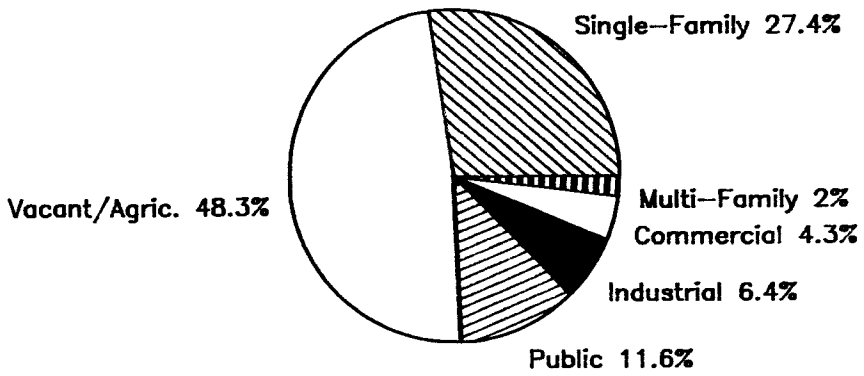
TABLE 16
WARREN TOWNSHIP LAND USE COMPARISONS
(ACRES)

	1989 LAND USE		1989 ZONING		COMPREHENSIVE PLAN	
	Acres	% of Total	Acres	% of Total	Acres	% of Total
1. RESIDENTIAL						
a. Very Low Density	1989.3	6.5	1735.8	5.7	3132.5	10.3
b. Low Density	6378.3	20.9	7967.2	26.3	14680.3	48.5
c. Medium Density	619.3	2.0	1256.5	4.1	2527.2	8.3
Subtotal	8986.9	29.5	10959.5	36.2	20340.0	67.2
2. COMMERCIAL						
a. Office	101.0	0.3	327.2	1.1	#	#
b. Retail	1197.5	4.0	1917.8	6.3	#	#
Subtotal	1298.5	4.3	2245.0	7.4	2138.2	7.1
3. INDUSTRIAL						
a. Light	616.6	2.0	1228.0	4.1	1534.4	5.1
b. Heavy	1332.3	4.4	2631.5	8.7	2419.8	8.0
Subtotal	1948.9	6.4	3859.5	12.7	3954.2	13.1
4. PUBLIC & SEMI-PUBLIC						
a. Special Uses	1300.5	4.3	2306.0	7.6	480.2	1.6
b. Streets	1896.4	6.3	0.0	0.0	1896.6	6.3
c. Public Parks	310.0	1.0	412.5	1.4	557.3	1.8
d. Urban Conservation	0.0	0.0	0.0	0.0	913.5	3.0
Subtotal	3506.9	11.6	2718.5	9.0	3847.6	12.7
5. VACANT/AGRICULTURE	14538.9	48.0	10636.0	35.1	0.0	0.0
TOTAL	30280.0	100.0	30418.5	100.5	30280.0	100.0

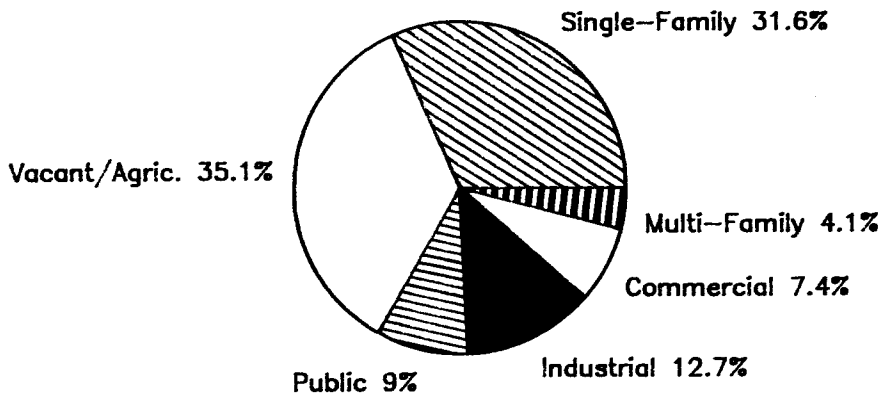
Rows 2a and 2b are combined in the commercial subtotal.

Figure 17

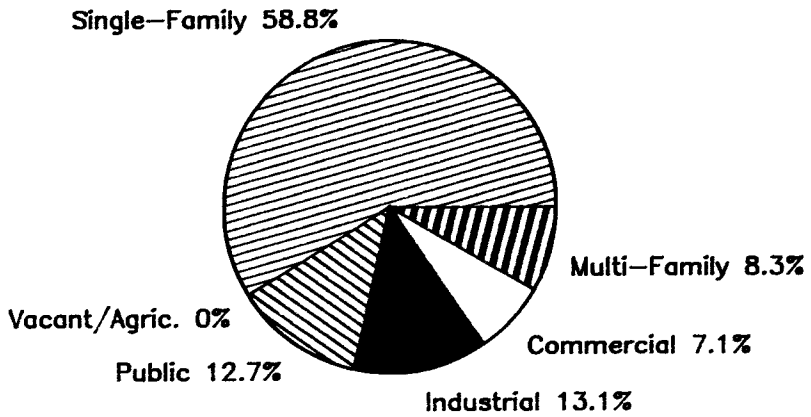
WARREN TOWNSHIP LAND USE COMPARISONS



1989 Land Use



1989 Zoning



1983 Comp. Plan

SUBAREA COMPARISONS

Subarea 1

In Subarea 1, single-family residential housing comes closer than any other land use to occupying the acreage suggested for it in the Comprehensive Plan. This is not due as much to rapid growth--there was about 2% growth in residential development between 1973 and 1989--as to pre-1973 homes' already occupying the areas zoned for residential use. The plan calls for 1,940 acres of single-family residential development, and 1,858 acres are already built. Undeveloped land that has already been properly zoned would provide for 120 more acres of single-family development than what is recommended by the Comprehensive Plan.

By comparison, nearly all other types of development currently occupy about half of the land recommended in the Comprehensive Plan: multi-family uses occupy 112 acres (48% of the plan's 232 allotted acres); commercial uses occupy 294 acres (54% of the allotted acres); and industrial uses occupy 872 acres (51% of the allotted acres).

As is characteristic of most of the township, retail development makes up the lion's share of commercial land use (279 acres of retail use--representing 41% growth--since 1973 versus 14 acres of office use--representing no growth--since 1973). Retail development is thus responsible for commercial development's occupying over half the acreage allotted to it by zoning and the Comprehensive Plan.

Subarea 1 surrounds the convergence of I-465, I-70, and the Conrail railroad line. The subarea has more land developed, zoned, and planned for industry than any other subarea. When fully developed according to the Comprehensive Plan, the subarea would contain 651 acres of light industry and 1,043 acres of heavy industry. Light industrial growth was more than triple that of heavy industrial growth between 1973 and 1989, with 89% and 23% growth, respectively.

The Comprehensive Plan calls for 81 acres of public park land in Subarea 1. Three-quarters of that land is already used for public parks.

Almost 24% of Subarea 1 was vacant in 1989, and about 5% (238 acres) was still zoned for agricultural use.

Subarea 2

Almost 48% (3,336 acres) of Subarea 2 remains "vacant" and is largely used for agricultural purposes. Most of this undeveloped land is zoned for residential development and is located east of German Church Road.

Of the 7,026 total acres in the subarea, 28% (about 2,000 acres) is currently developed residentially. The Comprehensive Plan calls for the eventual residential development of 71% (almost 5,000 acres) of the subarea. A relatively large proportion of this future residential development, 18% of the subarea, is slated for multi-family use. This is more than double the percentage of land allotted to multi-family use in any of the other four subareas. In fact, the acreage allotted to multi-family use in Subarea 1 by the Comprehensive Plan equals multi-family use allotted to the other four subareas combined.

Commercial development in Subarea 2, made up almost entirely of retail uses, is centered on the Washington Square mall area. The mall's development was the main reason for the more than 600% increase in retail land use between 1973 and 1989. Although only 7% (484 acres) of the subarea is designated for commercial use in the Comprehensive Plan, 11% (803 acres) is presently zoned for commercial use (again, mostly retail). Thus, the 340 acres already devoted to commercial uses represent only 42% of the subarea land zoned for commercial use but 70% of the subarea land recommended for commercial use in the Comprehensive Plan.

Of the nearly 4,000 Warren Township acres planned for industrial use in the Comprehensive Plan, fewer than 10% (362 acres) are located in Subarea 2. Industrial development presently occupies only 80 acres of the subarea, but 50 of those acres were added in the past sixteen years.

Although public park land in Subarea 2 is minimal (35 acres, or 0.5% of the subarea), the Comprehensive Plan reserves a significant amount of land (266 acres) for urban conservation, mostly along Grassy Creek.

Subarea 3

Of the five subareas in Warren Township, Subarea 3 is the most developed. Only 603 acres (13% of the subarea) remain undeveloped, of which 120 acres are still zoned for agricultural use. There is no land set aside for urban conservation.

This subarea leads the township in residential and commercial development (2,745 and 521 acres, respectively). Future residential development, according to the Comprehensive Plan, will increase the total residential acreage by about one-third.

Both residential and commercial acreage increased steadily between 1973 and 1989; but commercial increases were greater than residential in that time both in absolute increase (142 acres compared to 114 acres) and in percent increase (38% versus 4%). Commercial development (521 acres), on the other hand, already exceeds the 342 acres called for in the Comprehensive Plan. Nearly all of this development has been along Shadeland Avenue and Washington Street.

Partly because no railroads and only one interstate traverse Subarea 3, it contains little industrial development (113 acres). The Naval Avionics Center is the largest industrial use. The Comprehensive Plan recommends 47 more acres of industrial use, and 58 more acres are zoned for industrial uses; but there has been no increase in industrial acreage since 1973.

Subarea 3 has 178 acres of public parks, which places it second of the five subareas. That rank would hold if Warren Township parks were developed as planned.

Subarea 4

With over half its land presently vacant or used for agricultural purposes, Subarea 4 will ultimately be predominantly residential and industrial, according to the Comprehensive Plan.

Over 3,000 more acres of residential development are planned for this subarea, including 2,732 more acres of single-family development and 386 more acres of multi-family development. To reach the planned level of residential use, zoning for single-family and multi-family development would have to more than double. Future multi-family development is planned to occur primarily near the intersection of Southeastern Avenue and I-465.

Commercial development currently occupies less than one-third of the 470 acres of commercial development anticipated for this subarea in the Comprehensive Plan. Acreage for commercial use, on the other hand, increased 161% between 1973 and 1989. The subarea's commercial acreage is almost exclusively retail, with office uses accounting for less than 3.2% of all commercial land.

Subarea 4 is second only to Subarea 1 in present and planned land for industrial development. Most of the development acreage available in the future is south of the Conrail railroad line and both north and south of the Baltimore and Ohio railroad line.

Only 1% of Subarea 4 land (79 acres) is set aside for park use in the Comprehensive Plan. Proposed parks and urban conservation together, however, would make up 169 acres.

Subarea 5

Only 14% of the 6,126 acres in Subarea 5 is developed. The most outlying subarea, with no interstates and only one railroad running through it, Subarea 5 is planned for 77% residential development. The vast majority of residential acreage (97%) is planned for single-family rather than multi-family development.

Commercial and industrial development, which presently occupy only 62 acres altogether, should occupy 510 acres when the subarea is fully developed. While 218 acres are planned for industrial development, 422 acres are already zoned for such development.

The subarea has 227 acres of public parks planned. Thirty-nine acres are already used for parks, and the Whispering Hills Golf Course is due to open in 1991 for public use. In addition, 558 acres in this subarea are set aside for urban conservation.

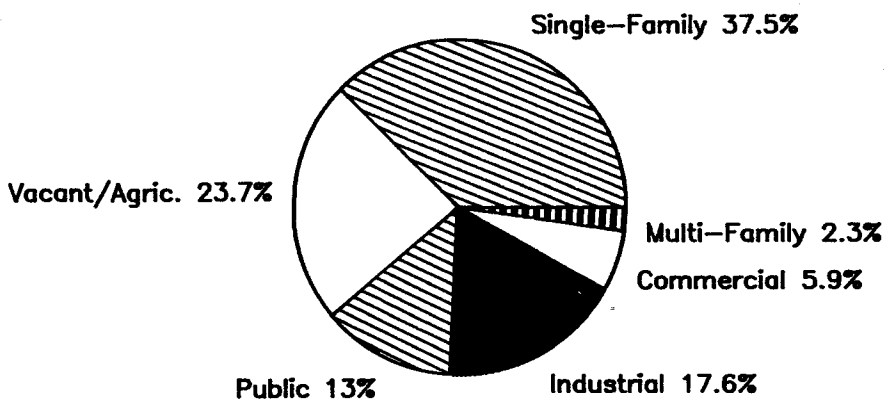
TABLE 17
WARREN TOWNSHIP LAND USE COMPARISONS
SUBAREA ONE
(ACRES)

	1989 LAND USE		1989 ZONING		COMPREHENSIVE PLAN	
	Acres	% of Total	Acres	% of Total	Acres	% of Total
1. RESIDENTIAL						
a. Very Low Density	45.0	0.9	0.0	0.0	0.0	0.0
b. Low Density	1812.5	36.6	2059.8	41.6	1940.0	39.2
c. Medium Density	111.5	2.3	131.3	2.6	232.2	4.7
Subtotal	1969.0	39.7	2191.1	44.2	2172.2	43.8
2. COMMERCIAL						
a. Office	14.4	0.3	52.0	1.0	#	#
b. Retail	279.3	5.6	472.3	9.5	#	#
Subtotal	293.7	5.9	524.3	10.6	549.0	11.1
3. INDUSTRIAL						
a. Light	240.0	4.8	526.0	10.6	651.2	13.1
b. Heavy	632.0	12.8	1043.3	21.1	1042.7	21.0
Subtotal	872.0	17.6	1569.3	31.7	1693.8	34.2
4. PUBLIC & SEMI-PUBLIC						
a. Special Uses	127.5	2.6	367.3	7.4	0.0	0.0
b. Streets	458.0	9.2	0.0	0.0	458.0	9.2
c. Public Parks	59.0	1.2	64.0	1.3	81.0	1.6
d. Urban Conservation	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal	644.5	13.0	431.3	8.7	539.0	10.9
5. VACANT/AGRICULTURE	1174.8	23.7	238.0	4.8	0.0	0.0
TOTAL	4954.0	100.0	4954.0	100.0	4954.0	100.0

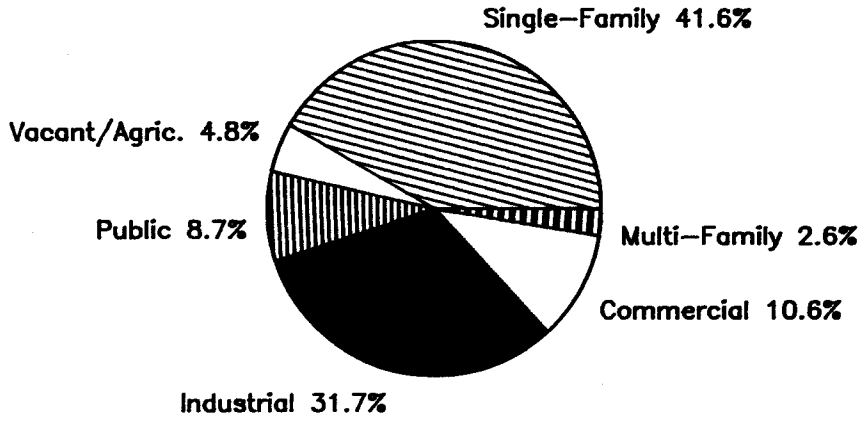
Rows 2a and 2b are combined in the commercial subtotal.

Figure 18

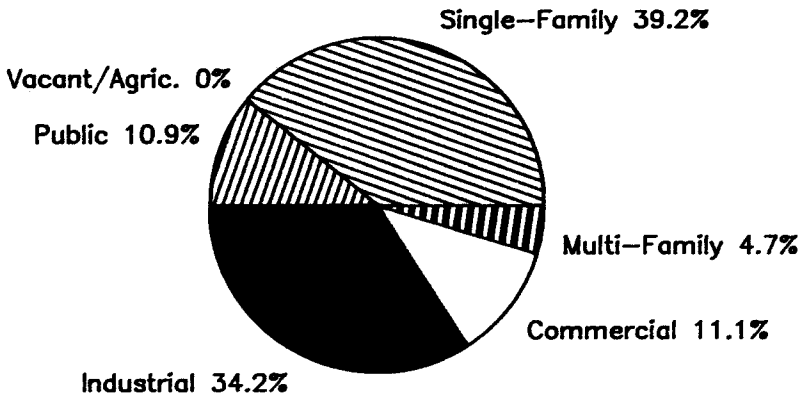
SUBAREA ONE LAND USE COMPARISONS



1989 Land Use



1989 Zoning



1983 Comp Plan

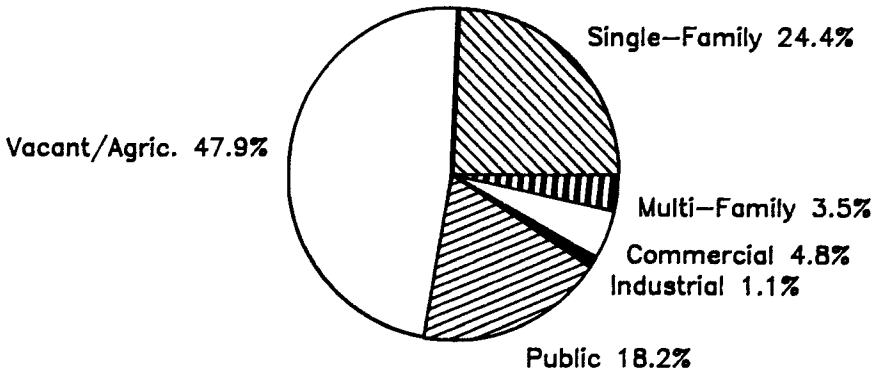
TABLE 18
WARREN TOWNSHIP LAND USE COMPARISONS
SUBAREA TWO
(ACRES)

	1989 LAND USE		1989 ZONING		COMPREHENSIVE PLAN	
	Acres	% of Total	Acres	% of Total	Acres	% of Total
1. RESIDENTIAL						
a. Very Low Density	430.8	6.1	326.0	0.0	441.0	6.3
b. Low Density	1325.8	18.9	1914.0	31.9	3229.7	46.0
c. Medium Density	244.5	3.5	746.0	10.6	1291.5	18.4
Subtotal	2001.1	28.5	2986.0	42.5	4962.2	70.6
2. COMMERCIAL						
a. Office	13.7	0.2	129.5	1.8	#	#
b. Retail	326.5	4.6	674.3	9.6	#	#
Subtotal	340.2	4.8	803.8	11.4	484.2	6.9
3. INDUSTRIAL						
a. Light	53.0	0.8	65.7	0.9	85.5	1.2
b. Heavy	27.0	0.4	295.5	4.2	276.8	3.9
Subtotal	80.0	1.1	361.2	5.1	362.3	5.2
4. PUBLIC & SEMI-PUBLIC						
a. Special Uses	617.5	8.8	815.7	11.6	331.7	4.7
b. Streets	616.5	8.8	0.0	0.0	616.5	8.8
c. Public Parks	34.5	0.5	42.8	0.6	3.7	0.1
d. Urban Conservation	0.0	0.0	0.0	0.0	265.5	3.8
Subtotal	1268.5	18.1	858.5	12.2	1217.4	17.3
5. VACANT/AGRICULTURE	3336.3	47.5	2016.5	28.7	0.0	0.0
TOTAL	7026.1	100.0	7026.0	100.0	7026.0	100.0

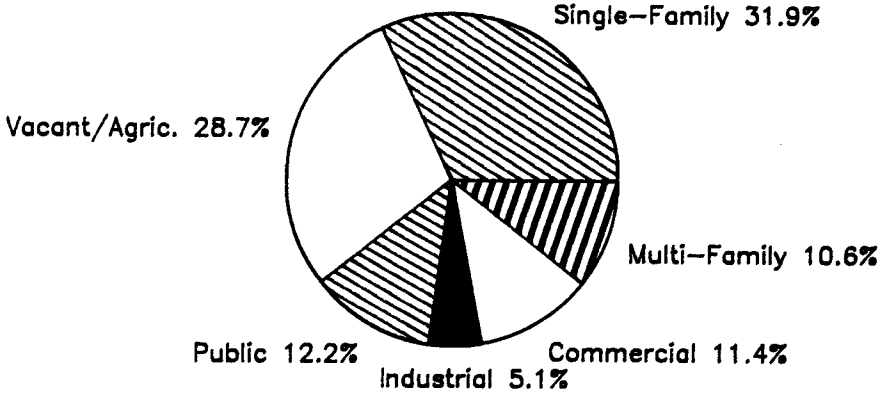
Rows 2a and 2b are combined in the commercial subtotal.

Figure 19

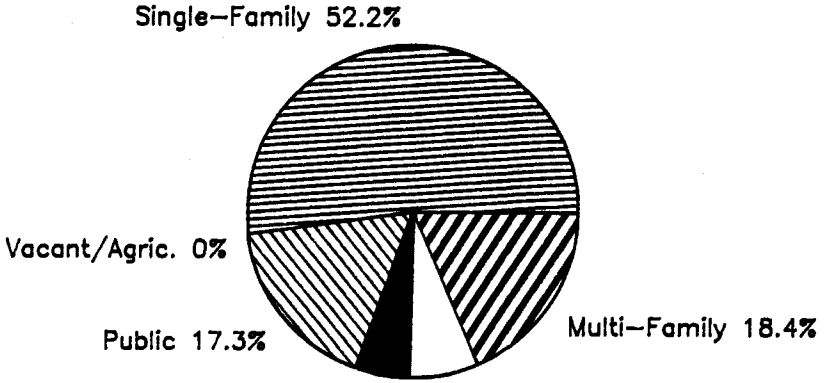
SUBAREA TWO LAND USE COMPARISONS



1989 Land Use



1989 Zoning



1983 Comp. Plan

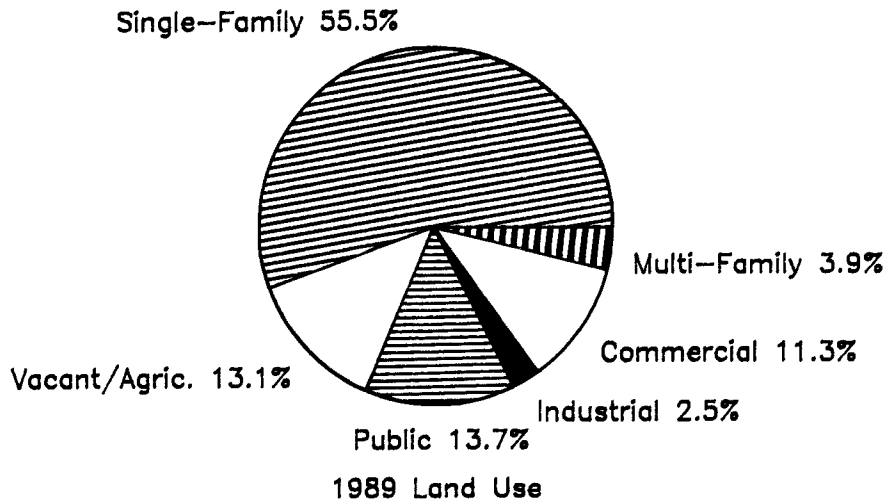
TABLE 19
WARREN TOWNSHIP LAND USE COMPARISONS
SUBAREA THREE
(ACRES)

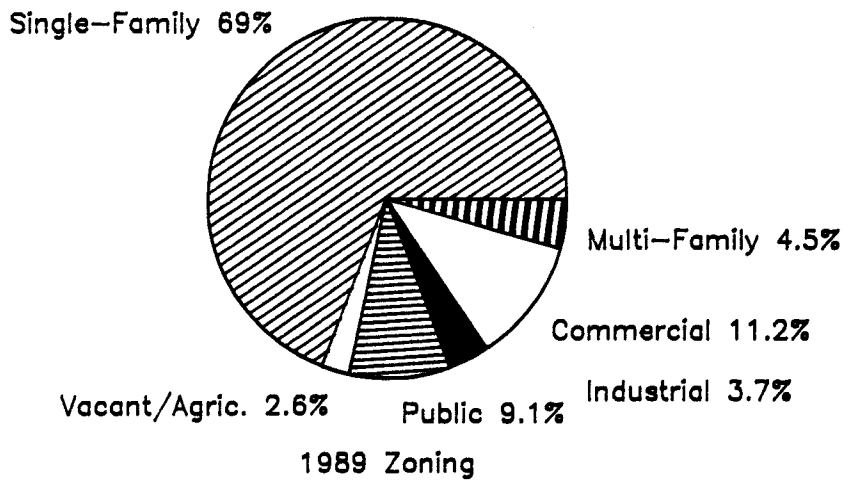
	1989 LAND USE		1989 ZONING		COMPREHENSIVE PLAN	
	Acres	% of Total	Acres	% of Total	Acres	% of Total
1. RESIDENTIAL						
a. Very Low Density	358.5	0.1	196.8	4.3	124.2	2.7
b. Low Density	2204.0	55.6	2844.8	65.3	3099.7	67.2
c. Medium Density	182.0	3.9	210.5	4.5	405.0	8.8
Subtotal	2744.5	59.5	3252.1	74.1	3628.9	78.7
2. COMMERCIAL						
a. Office	68.5	1.5	99.5	1.9	#	#
b. Retail	452.3	9.8	543.5	9.4	#	#
Subtotal	520.8	11.3	643.0	11.3	342.0	7.4
3. INDUSTRIAL						
a. Light	113.0	2.5	166.2	3.6	159.8	3.5
b. Heavy	0.0	0.0	4.5	0.1	0.0	0.0
Subtotal	113.0	2.5	170.7	3.7	159.8	3.5
4. PUBLIC & SEMI-PUBLIC						
a. Special Uses	206.3	4.5	247.5	5.4	67.5	1.5
b. Streets	246.2	5.3	0.0	0.0	246.3	5.3
c. Public Parks	177.5	3.8	178.3	3.9	166.5	3.6
d. Urban Conservation	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal	630.0	13.7	425.8	9.2	480.3	10.4
5. VACANT/AGRICULTURE	602.7	13.1	119.5	2.6	0.0	0.0
TOTAL	4611.0	100.0	4611.1	100.0	4611.0	100.0

Rows 2a and 2b are combined in the commercial subtotal.

Figure 20

SUBAREA THREE LAND USE COMPARISONS





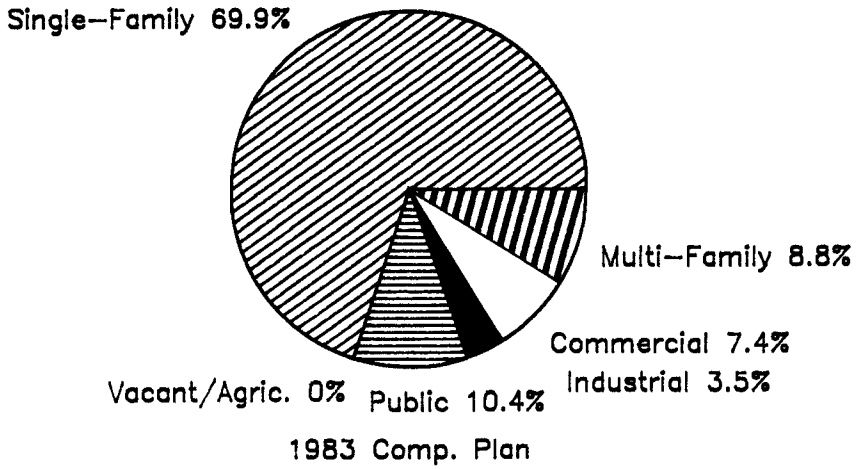


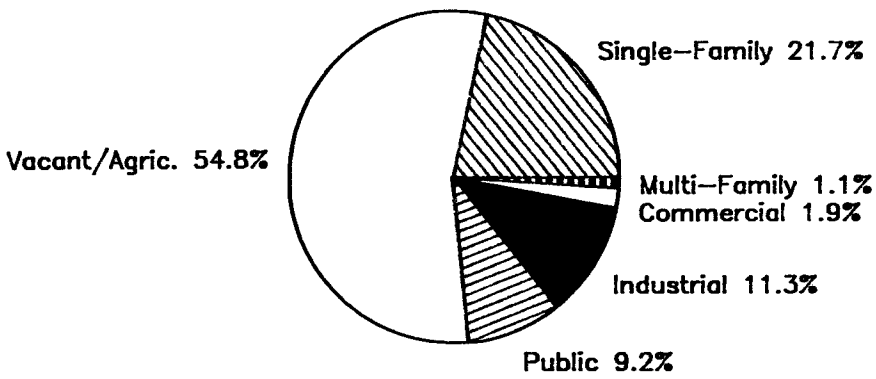
TABLE 20
WARREN TOWNSHIP LAND USE COMPARISONS
SUBAREA FOUR
(ACRES)

	1989 LAND USE		1989 ZONING		COMPREHENSIVE PLAN	
	Acres	% of Total	Acres	% of Total	Acres	% of Total
1. RESIDENTIAL						
a. Very Low Density	696.0	9.2	983.5	13.0	1444.5	19.1
b. Low Density	941.5	12.4	940.1	12.4	2925.1	38.7
c. Medium Density	81.5	1.1	139.7	1.8	468.0	6.2
Subtotal	1719.0	22.7	2063.3	27.3	4837.6	64.0
2. COMMERCIAL						
a. Office	3.2	0.0	47.7	0.6	#	#
b. Retail	137.5	1.8	223.8	3.0	#	#
Subtotal	140.7	1.9	271.5	3.6	470.3	6.2
3. INDUSTRIAL						
a. Light	194.2	2.6	347.5	4.6	544.5	7.2
b. Heavy	662.2	8.8	1004.0	13.3	977.0	12.9
Subtotal	856.4	11.3	1351.5	17.6	1521.5	20.1
4. PUBLIC & SEMI-PUBLIC						
a. Special Uses	213.2	2.8	432.8	5.7	81.0	1.1
b. Streets	484.0	6.4	0.0	0.0	484.0	6.4
c. Public Parks	0.0	0.0	88.2	1.2	78.8	1.0
d. Urban Conservation	0.0	0.0	0.0	0.0	90.0	1.2
Subtotal	697.2	9.2	521.0	6.9	733.8	9.7
5. VACANT/AGRICULTURE	4149.7	54.9	3355.7	44.4	0.0	0.0
TOTAL	7563.0	100.0	7563.0	100.0	7563.0	100.0

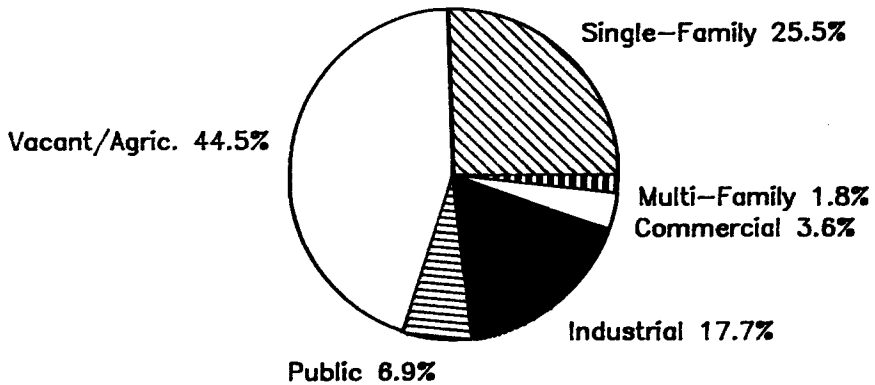
Rows 2a and 2b are combined in the commercial subtotal.

Figure 21

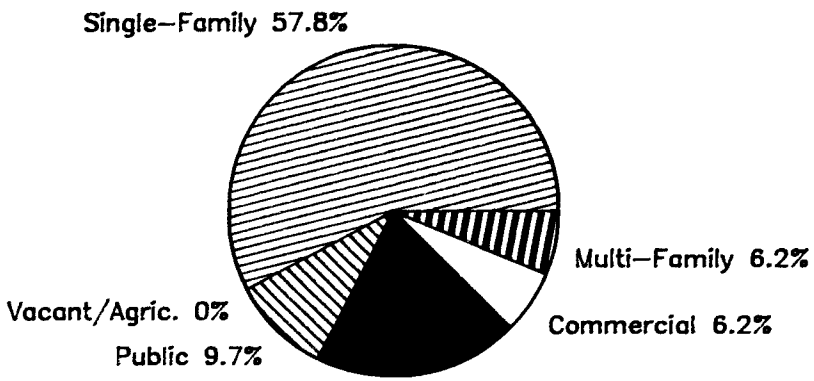
SUBAREA FOUR LAND USE COMPARISONS



1989 Land Use



1989 Zoning



1983 Comp. Plan

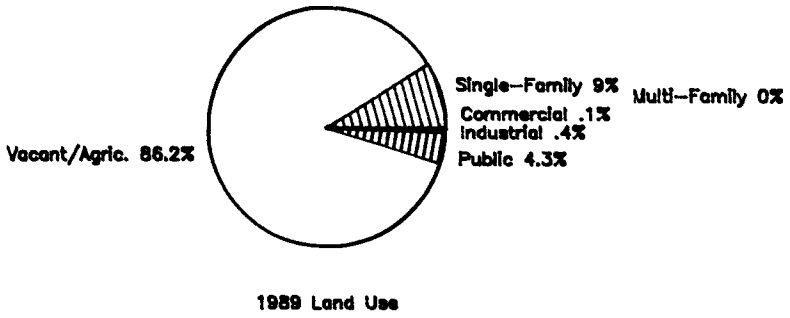
TABLE 21
WARREN TOWNSHIP LAND USE COMPARISONS
SUBAREA FIVE
(ACRES)

	1989 LAND USE		1989 ZONING		COMPREHENSIVE PLAN	
	Acres	% of Total	Acres	% of Total	Acres	% of Total
1. RESIDENTIAL						
a. Very Low Density	459.0	7.5	229.5	3.8	1122.8	18.3
b. Low Density	94.5	1.5	208.5	3.4	3485.7	56.9
c. Medium Density	0.0	0.0	29.0	0.5	130.5	2.1
Subtotal	553.5	9.0	467.0	7.6	4739.0	77.4
2. COMMERCIAL						
a. Office	1.0	0.0	0.0	0.0	#	#
b. Retail	3.0	0.0	7.0	0.1	#	#
Subtotal	4.0	0.1	7.0	0.1	292.5	4.8
3. INDUSTRIAL						
a. Light	16.0	0.3	140.0	2.3	94.5	1.5
b. Heavy	11.0	0.2	281.8	4.6	123.3	2.0
Subtotal	27.0	0.4	421.8	6.9	217.8	3.6
4. PUBLIC & SEMI-PUBLIC						
a. Special Uses	130.0	2.1	385.7	6.3	0.0	0.0
b. Streets	91.5	1.5	0.0	0.0	91.5	1.5
c. Public Parks	39.0	0.6	39.3	0.6	227.3	3.7
d. Urban Conservation	0.0	0.0	0.0	0.0	558.0	9.1
Subtotal	260.5	4.3	425.0	6.9	876.8	14.3
5. VACANT/AGRICULTURE	5281.0	86.2	4805.2	78.4	0.0	0.0
TOTAL	6126.0	100.0	6126.0	100.0	6126.0	100.0

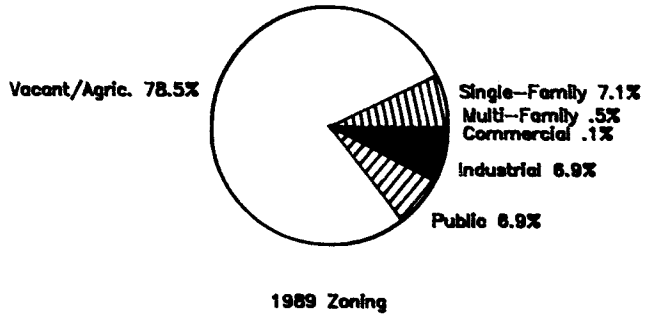
Rows 2a and 2b are combined in the commercial subtotal.

Figure 22

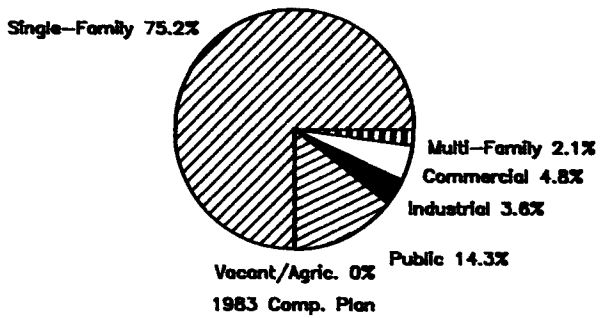
SUBAREA FIVE LAND USE COMPARISONS



1989 Land Use



1989 Zoning



1983 Comp. Plan

CHAPTER 6

WARREN TOWNSHIP TRANSPORTATION SYSTEM

Transportation is a City service that is an extremely important factor in determining the type and density of development. In high growth areas, there will be increased demands for providing greater levels of transportation services. This chapter describes the transportation system in Warren Township, including

- a description of the existing facilities
- a needs assessment, and
- a summary of planned improvements.

DESCRIPTION OF EXISTING FACILITIES

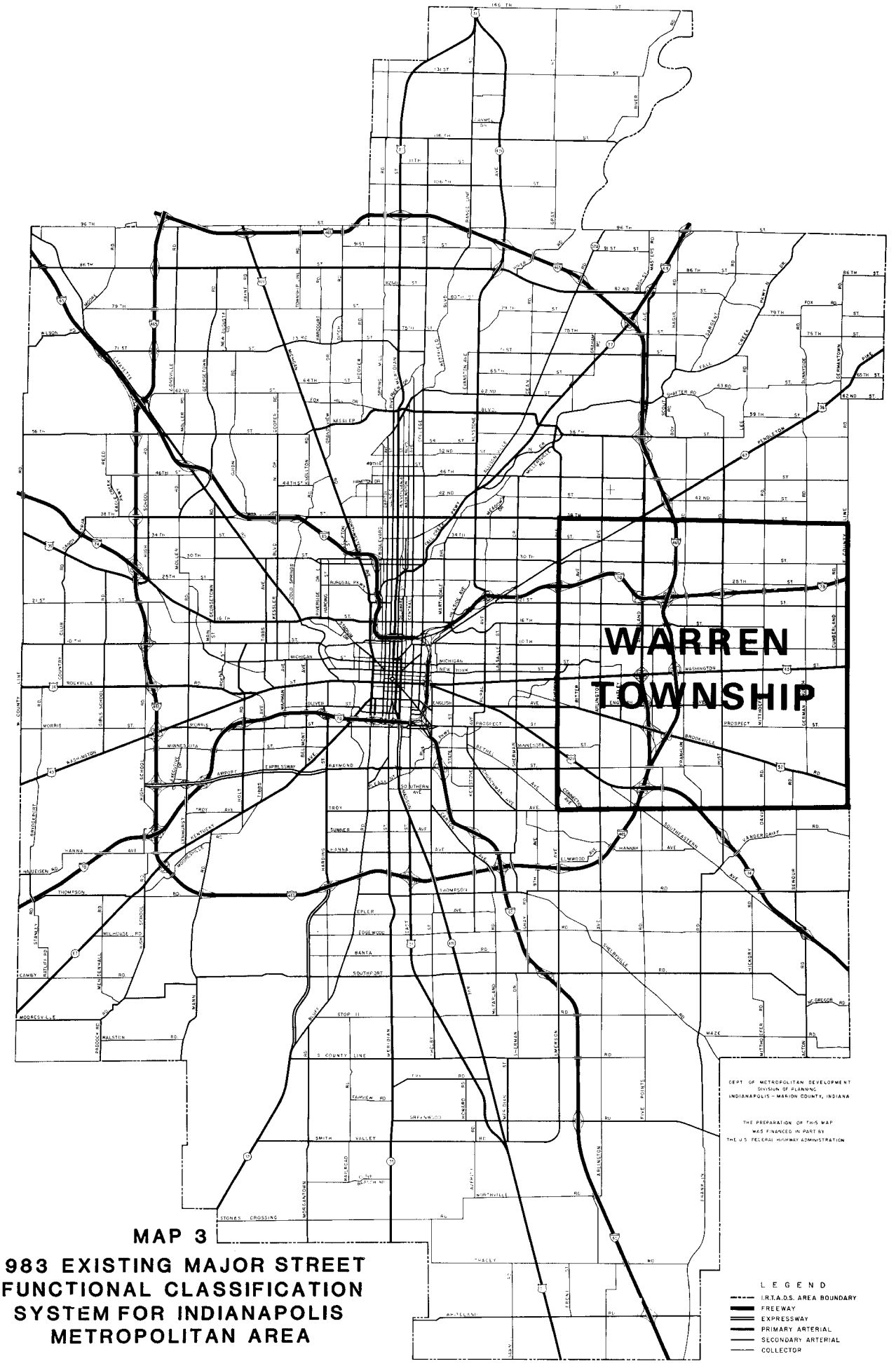
Existing Street System

One way to understand the existing transportation network in Warren Township is to examine its functional street classification. A functional classification is the grouping of roadways in the planning area into an integrated system identified by their principal uses in the overall transportation system. It is based upon the concept that each street, road, and highway has a predominant purpose ranging from localized access (such as streets in residential subdivisions) to through-movement (such as freeways). The functional street classifications for all of Marion County are illustrated on Map 3. Map 4 shows the Existing Functional Classification System for Warren Township. Table 22 provides definitions of the classification categories, and Table 23 lists all Warren Township streets that meet any of the first five definitions (Freeways through Collectors).

The City's street system adheres to a combination of a grid system containing rectangular blocks and a spoked-wheel pattern of streets converging on the downtown area. Warren Township's street system is designed along the same grid-like pattern, with Washington Street, I-70, Massachusetts Avenue, and Southeastern Avenue serving as the "spokes" that move traffic in and out of the downtown area. Michigan Street and New York Street are two more arterials which connect the township with Downtown Indianapolis.

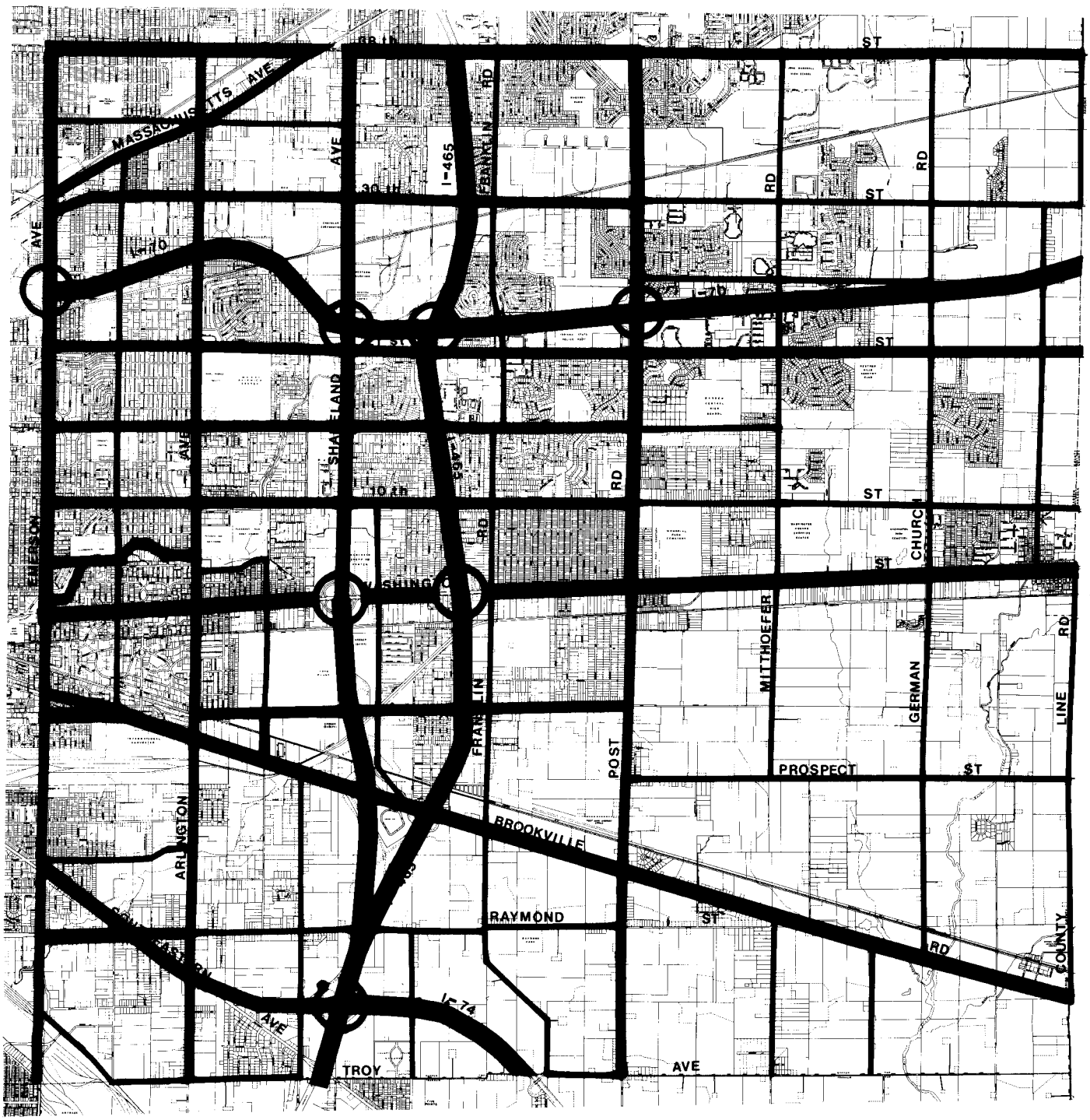
Public Transit

The Indianapolis Public Transportation Corporation/METRO



MAP 3

1983 EXISTING MAJOR STREET FUNCTIONAL CLASSIFICATION SYSTEM FOR INDIANAPOLIS METROPOLITAN AREA



WARREN TOWNSHIP

MAP 4 / 1983 EXISTING MAJOR STREET FUNCTIONAL CLASSIFICATION SYSTEM

- Freeway
- Collector
- Secondary Arterial
- Primary Arterial

The preparation of this map was financed in part by a Community Development Block Grant

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Department of Metropolitan Development
Division of Planning
Indianapolis-Marion County, Indiana

Table 22
Indianapolis Functional Street
Classification Definitions

1)	Freeways	Divided highways with full control of access and grade-separated interchanges. Primary function is movement of traffic, in particular long trips made within and through the study area. These roads are designed for high-speed operation (50-60 MPH) and require wide rights-of-way ranging up to 300 feet.
2)	Expressways	Access controlled routes with design and operational characteristics similar to freeways, with some intersections at-grade. Access control is usually obtained by using medians, frontage roads, and selected location of intersections. These roads are designed for relatively high-speed operation (45 MPH) and require rights-of-way ranging up to 200 feet.
3)	Primary Arterials	These routes have greater traffic-carrying capabilities and higher levels-of-service than other at-grade routes to channelize major traffic movements. They either carry higher volumes than other adjacent routes or have the potential to carry higher volumes. They serve as connecting routes to the freeway system and to other primary arterials, and are oriented primarily to moving traffic rather than serving abutting land-use. Rights-of-way may range up to 120 feet.
4)	Secondary Arterials	These routes serve a higher percentage of short trips than do primary arterials. They carry significant volumes and are needed to provide system continuity. Right-of-way widths may range up to 100 feet.
5)	Collectors	Primary function is to collect traffic from an area and move it to an arterial while also providing substantial service to abutting land-uses.
6)	Local Streets	The remainder of the surface streets. They have the primary function of service to abutting land-uses.

TABLE 23
STREET FACILITIES INVENTORY - 1989

STREET NAME	TO	FROM	EXISTING COUNT	YR	EXISTING PAVEMENT WIDTH (FT)	EXISTING # OF LANES	EXISTING CAPACITY	EXISTING LOS	LENGTH MILES
ARLINGTON AVE	38	34	13,162	88	48	4	32,000	A	0.49
ARLINGTON AVE	34	30	13,668	88	48	4	32,000	A	0.50
ARLINGTON AVE	30	21	15,623	88	48	4	32,000	A	1.01
ARLINGTON AVE	21	16	19,040	88	40	4	29,760	C	0.51
ARLINGTON AVE	16	10	21,307	88	40	4	29,760	A	0.49
ARLINGTON AVE	10	PRN	17,116	88	40	4	29,760	A	0.36
ARLINGTON AVE	PRN	WAS	15,632	88	38	3	29,760	A	0.35
ARLINGTON AVE	WAS	BRV	11,364	88	36	2	14,880	C	0.93
ARLINGTON AVE	BRV	MIN	7,534	88	20	2	14,880	A	0.74
ARLINGTON AVE	MIN	RAY	7,534	88	21	2	14,880	A	0.55
ARLINGTON AVE	RAY	SEA	5,169	88	20	2	14,880	A	0.28
ARLINGTON AVE	SEA	TRO	6,898	88	20	2	14,880	A	0.72
BROOKVILLE	ENG	RIT	16,320	88	50	4	32,000	A	0.16
BROOKVILLE	RIT	ARL	16,320	88	50	4	32,000	A	0.52
BROOKVILLE	ARL	SHA	13,845	88	22-48	2-4	16,000	D	148.00
BROOKVILLE	SHA	465	16,859	88	48	4	32,000	A	0.28
BROOKVILLE	465	FRA	16,054	88	48	4	32,000	A	0.82
BROOKVILLE	FRA	POS	15,326	88	22	2	15,520	E	0.94
BROOKVILLE	POS	DAV	10,717	88	21	2	15,520	B	113.00
BROOKVILLE	DAV	GCH	10,833	88	22	2	15,520	B	0.99
BROOKVILLE	GCH	E.CTL.	10,833	88	22	2	15,520	B	101.00
N. CNTY LINE E	38	30	344	88	15	2	13,920	A	101.00
S. CNTY LINE E	WAS	PRO	1,668	88	18	2	13,920	A	142.00
S. CNTY LINE E	PRO	BRV	1,763	88	18	2	13,920	A	144.00
CUMBERLAND	30	21	1,137	88	16	2	14,400	A	1.05
CUMBERLAND	21	10	2,814	88	17	2	14,400	A	1.00
CUMBERLAND	10	WAS	3,140	88	18	2	14,400	A	0.40
DAVIS	BRV	RAY	1,289	88	16	2	13,920	A	0.10
DAVIS	RAY	TRO	602	88	16	2	13,920	A	1.00
N.EMERSON	38	MAS	27,652	88	72	6	48,000	A	0.97
N.EMERSON	MAS	21	327,855	88	72	6	48,000	B-C	1.01
N.EMERSON	21	16	23,501	88	48	4	32,000	C	0.50
N.EMERSON	16	10	17,716	88	40	4	29,760	A	0.50
N.EMERSON	10	MIR	14,725	88	24	2	16,000	E	0.45
N.EMERSON	MIR	NY	14,719	88	24	2	16,000	E	0.17
N.EMERSON	NY	WAS	16,497	88	24	2	16,000	F	0.14
S.EMERSON	WAS	BRV	13,839	88	40	4	29,760	A	0.55
S.EMERSON	BRV	ENG	11,841	88	40	4	29,760	A	0.12
S.EMERSON	ENG	PRO	14,201	88	40	4	29,760	A	0.51
S.EMERSON	PRO	MIN	12,074	88	18	2	29,760	A	0.48
S.EMERSON	MIN	SEA	12,268	88	18	2	29,760	A	0.07
S.EMERSON	SEA	RAY	11,970	88	18	2	29,760	A	0.42
ENGLISH AVE	EME	BRV	13,034	88	40	4	32,000	A	0.35
ENGLISH AVE	ARL	KIT	5,505	88	24	2	29,760	A	0.50
ENGLISH AVE	KIT	SHA	9,581	88	40-50	4	29,760	A	0.60
ENGLISH AVE	SHA	FRA	5,928	88	50-19	4-2	14,880	A	0.70
FRANKLIN RD	38	30	14065.5	88	24-35	2	27,840	D	1.00

TABLE 23
STREET FACILITIES INVENTORY - 1989

STREET NAME	TO	FROM	EXISTING COUNT	YR	EXISTING PAVEMENT WIDTH (FT)	EXISTING # OF LANES	EXISTING CAPACITY	EXISTING LOS	LENGTH MILES
FRANKLIN RD	30	21	12,356	88	22-24	2	16,000	B-C	1.07
FRANKLIN RD	21	16	9,668	88	20	2	16,000	B	0.57
FRANKLIN RD	16	10	9,195	88	19	2	14,880	B	0.50
FRANKLIN RD	10	WAS	8,202	88	18	2	14,400	A	0.60
FRANKLIN RD	WAS	RAW	8,888	88	18	2	14,400	B	0.76
FRANKLIN RD	RAW	BRV	5,061	88	18	2	14,400	A	0.80
FRANKLIN RD	BRK	RAY	2,711	88	20	2	14,880	A	1.60
FRANKLIN RD	RAY	TRO	996	88	20	2	14,880	A	1.20
G. CHURCH	38	30	5,138	88	17	2	14,400	A	1.01
G. CHURCH	30	I70	4,998	88	17	2	14,400	A	0.70
G. CHURCH	I70	21	4,998	88	17	2	14,400	A	0.40
G. CHURCH	21	10	7,213	88	18	2	14,880	A	1.00
G. CHURCH	10	WAS	5,006	88	20	2	14,880	A	0.45
G. CHURCH	WAS	PRO	2,721	88	20	2	14,880	A	1.41
G. CHURCH	PRO	BRV	2,015	88	20	2	14,880	A	1.15
G. CHURCH	BRV	TRO	-	88	-	-	-	A	0.85
E. I-70	EME	SHA	93,802	88	72	6	140,000	C	2.30
E. I-70	SHA	465	80,123	88	72	6	140,000	C	0.60
E. I-70	465	POS	78,244	88	72	6	105,000	C	1.30
E. I-70	POS	GCH	47,900	88	48	4	105,000	A	2.00
E. I-70	GCH	ECL		88	48	4	70,000	A	1.00
MASS. AVE	EME	32ND	9,701	88	20	2	14,880	B	0.30
MASS. AVE	32	RIT	9,701	88	20	2	14,880	B	0.27
MASS. AVE	RIT	ARL	11,811	88	20	2	14,880	C	0.54
MASS. AVE	ARL	38TH	14,112	88	20	2	14,880	E	0.94
MITTHOEFFER	38	30	10,513	88	16	2	13,920	C	1.01
MITTHOEFFER	30	21	12,091	88	16	2	13,920	D	1.01
MITTHOEFFER	21	16	14,004	88	24	2	13,920	F	0.50
MITTHOEFFER	16	10	15,209	88	16	2	16,000	E	0.49
MITTHOEFFER	10	WAS	14,022	88	48	4	13,920	F	0.50
MITTHOEFFER	WAS	RAW	5,110	88	16	2	13,920	A	0.85
MITTHOEFFER	RAW	PRO	3,449	88	16	2	13,920	A	0.50
MITTHOEFFER	PRO	BRV	-	-	-	-	-	-	1.35
POST RD.	38	34	24,924	88	48	4	32,000	C	0.50
POST RD.	34	30	24,924	88	48	4	32,000	C	0.50
POST RD.	30	25	31,189	88	72	6	48,000	B	0.50
POST RD.	25	21	34,602	88	72	6	48,000	C	0.47
POST RD.	21	16	24,261	88	48	4	32,000	C	0.50
POST RD.	16	10	22,729	88	48	4	32,000	C	0.50
POST RD.	10	WAS	16,609	88	48	4	32,000	A	0.55
POST RD.	WAS	RR	10,336	88	21	2	14,880	B	0.20
POST RD.	RR	RAW	10,336	88	21	2	14,880	B	0.60
POST RD.	RAW	BRV	10,098	88	21	2	14,880	B	1.07
POST RD.	BRV	RAY	7,735	88	21	2	14,880	A	0.40
POST RD.	RAY	TRO	5,919	88	20	2	14,880	A	0.99
PROSPECT	EME	ARL	-						1.00
PROSPECT	ARL	SHA	-	-	-	-	-	-	0.25

TABLE 23
STREET FACILITIES INVENTORY - 1989

STREET NAME	TO	FROM	EXISTING COUNT	YR	EXISTING PAVEMENT WIDTH (FT)	EXISTING # OF LANES	EXISTING CAPACITY	EXISTING LOS	LENGTH MILES
PROSPECT	POS	MIT	2,294	89	20	2	14,880	A	1.00
PROSPECT	MIT	GCH	2,282	89	20	2	14,880	A	1.00
PROSPECT	GCH	E. CTL	1,144	89	20	2	14,880	A	1.00
RAYMOUND	EME	SEA	13179	86	48	4	32,000	A	0.60
RAYMOUND	SEA	ARL	6869	86	18	2	14,400	A	0.40
RAYMOUND	ARL	HUN	4168	86	18	2	14,400	A	0.75
RAYMOUND	HUN	FRA	3281	86	18	2	14,400	A	1.25
RAYMOUND	FRA	POS	1985	86	18	2	14,400	A	0.90
RAYMOUND	POS	DAV	900	86	18	2	14,400	A	1.00
SHADELAND	38	34	24411	85	48	4	32,000	C	0.50
SHADELAND	34	30	24411	85	48	4	32,000	C	0.50
SHADELAND	30	I70	30304	85	48	4	32,000	E	0.80
SHADELAND	I70	21	36715	85	48	4	32,000	F	0.12
SHADELAND	21	16	33211	85	48	4	32,000	F	0.50
SHADELAND	16	10	29157	85	48	4	32,000	E	0.50
SHADELAND	10	WAS	22699	85	48	4	32,000	C	0.65
SHADELAND	WAS	PCR	19576	85	48	4	32,000	B	0.20
SHADELAND	PCR	ENG	19576	85	48	4	32,000	B	0.50
SHADELAND	ENG	BRV	17716	85	48	4	32,000	A	0.59
SHADELAND	BRV	465	16793	87	48	4	32,000	A	0.90
SOUTHEASTERN	EME	RAY	8712	87	23	2	16,000	A	0.73
SOUTHEASTERN	RAY	ARL	13371	87	48	4	32,000	A	0.46
SOUTHEASTERN	ARL	I74	16268	87	48	4	32,000	A	0.35
SOUTHEASTERN	I74	HUN	5603	87	21	2	15,520	A	0.61
E. TROY	EME	RIT	-	-	-	-	-	-	0.50
E. TROY	RIT	ARL	-	-	18	2	14,880	A	0.50
E. TROY	ARL	SEA	818	86	18	2	14,880	A	0.97
E. TROY	SEA	FIS	784	86	20	2	14,880	A	0.52
E. TROY	FIS	FRA	683	86	20	2	14,880	A	0.91
E. TROY	FRA	POS	531	86	20	2	14,880	A	0.50
E. TROY	POS	DAV	725	86	20	2	14,880	A	0.95
E. TROY	DAV	SNR	363	86	20	2	14,880	A	0.85
E. WASHINGTON	EME	RIT	24,122	88	50	6	29,760	D	0.50
E. WASHINGTON	RIT	ARL	19,949	88	50	6	29,760	B	0.50
E. WASHINGTON	ARL	SHA	26,695	88	50-58	6	29,760	D	0.98
E. WASHINGTON	SHA	465	30,204	88	58	6	43,200	B-C	0.73
E. WASHINGTON	465	FRA	35,674	88	58	6	43,200	D	0.20
E. WASHINGTON	FRA	POS	30,515	88	44	4	31,040	E	0.90
E. WASHINGTON	POS	MIT	28,025	88	44	4	31,040	D	1.04
E. WASHINGTON	MIT	GCH	21,852	88	44	4	32,000	B	1.00
E. WASHINGTON	GCH	WHT		88	44	4	31,040	B	0.60
E. WASHINGTON	WHT	CUM	20,185	88	44	4	31,040	B	0.13
E. WASHINGTON	CUM	E. CNT		88	55	5	31,040	B	0.36
E. 10TH ST.	EME	ARL	16,978	85	40-48	4	32,000	A	1.00
E. 10TH ST.	ARL	SHA	16,899	85	20	2	14,880	F	0.99
E. 10TH ST.	SHA	FRA	16,550	85	20	2	14,880	F	1.00
E. 10TH ST.	FRA	POS	11,743	85	20	2	14,880	C	0.89

TABLE 23
STREET FACILITIES INVENTORY - 1989

STREET NAME	TO	FROM	EXISTING COUNT	YR	EXISTING PAVEMENT WIDTH (FT)	EXISTING # OF LANES	EXISTING CAPACITY	EXISTING LOS	LENGTH MILES
E. 10TH ST.	POS	MIT	11,573	85	20	2	14,880	C	1.04
E. 10TH ST.	MIT	GCH	5,680	85	48	4	14,400	A	0.35
E. 10TH ST.	GCH	CUM	2,790	85	18	2	14,400	A	0.29
E. 10TH ST.	CUM	ECL	-	-	-	-	-	-	-
E. 16TH ST.	EME	ARL	14,853	86	25-50	2-4	27,840	A	1.00
E. 16TH ST.	ARL	SHA	10,196	86	18-22	2	15,520	B	1.03
E. 16TH ST.	SHA	FRA	9,209	86	22	2	15,520	A	1.00
E. 16TH ST.	FRA	POS	9,905	86	20	2	15,520	B	1.00
E. 16TH ST.	POS	MIT	6,819	86	20	2	14,880	A	1.00
E. 21ST ST.	EME	RIT	13,249	87	18	2	14,400	E	0.50
E. 21ST ST.	RIT	ARL	13,628	87	18	2	14,400	E	0.50
E. 21ST ST.	ARL	SHA	16,283	87	48	4	32,000	A	1.06
E. 21ST ST.	SHA	FRA	15,570	87	48	4	15,520	F	1.13
E. 21ST ST.	FRA	POS	13,967	87	48	4	15,520	D	0.83
E. 21ST ST.	POS	MIT	17,158	87	21	2	14,880	F	1.03
E. 21ST ST.	MIT	GCH	8,107	87	18	2	14,400	A	1.00
E. 21ST ST.	GCH	CUM	2,728	87	18	2	14,400	A	0.74
E. 21ST ST.	CUM	ECL	2,746	87	18	2	14,400	A	0.25
E 30TH ST.	EME	RIT	11,281	87	48	4	32,000	A	0.50
E 30TH ST.	RIT	ARL	10,850	87	48	4	32,000	A	0.50
E 30TH ST.	ARL	SHA	11,032	87	48	4	32,000	A	0.98
E 30TH ST.	SHA	FRA	13,347	87	20	2	14,880	D	1.00
E 30TH ST.	FRA	POS	9,880	87	20	2	14,880	B	0.90
E 30TH ST.	POS	MIT	9,458	87	18	2	14,400	B	1.00
E 30TH ST.	MIT	GCH	4,094	87	20	2	14,880	A	1.02
E 30TH ST.	GCH	CUM	1,444	87	20	2	14,880	A	0.75
E 30TH ST.	CUM	ECL	1,444	87	20	2	14,880	A	0.25
E 38TH ST.	EME	ARL	20,688	87	40	4	29,760	B	1.00
E 38TH ST.	ARL	MAS	20,382	87	40	4	29,760	B	0.85
E 38TH ST.	MAS	SHA	18,278	87	48	4	32,000	B	0.18
E 38TH ST.	SHA	FRA	20,200	87	48	4	32,000	B	1.00
E 38TH ST.	FRA	POS	22,823	87	48	4	32,000	C	0.89
E 38TH ST.	POS	MIT	16,845	87	20	2	14,880	F	1.00
E 38TH ST.	MIT	GCH	4,580	87	18	2	14,400	A	1.02
E 38TH ST.	GCH	ECL	1,380	87	18	2	14,400	A	1.01
I-465	I70	WAS	78,030	88	72	6	105,000	C	1.85
I-465	WAS	BRV	68,400	88	72	6	105,000	B	1.54
I-465	BRV	SHA	59,861	88	48	4	70,000	A	0.90
I-465	SHA	I74	-	-	72	6	105,000	A	0.78

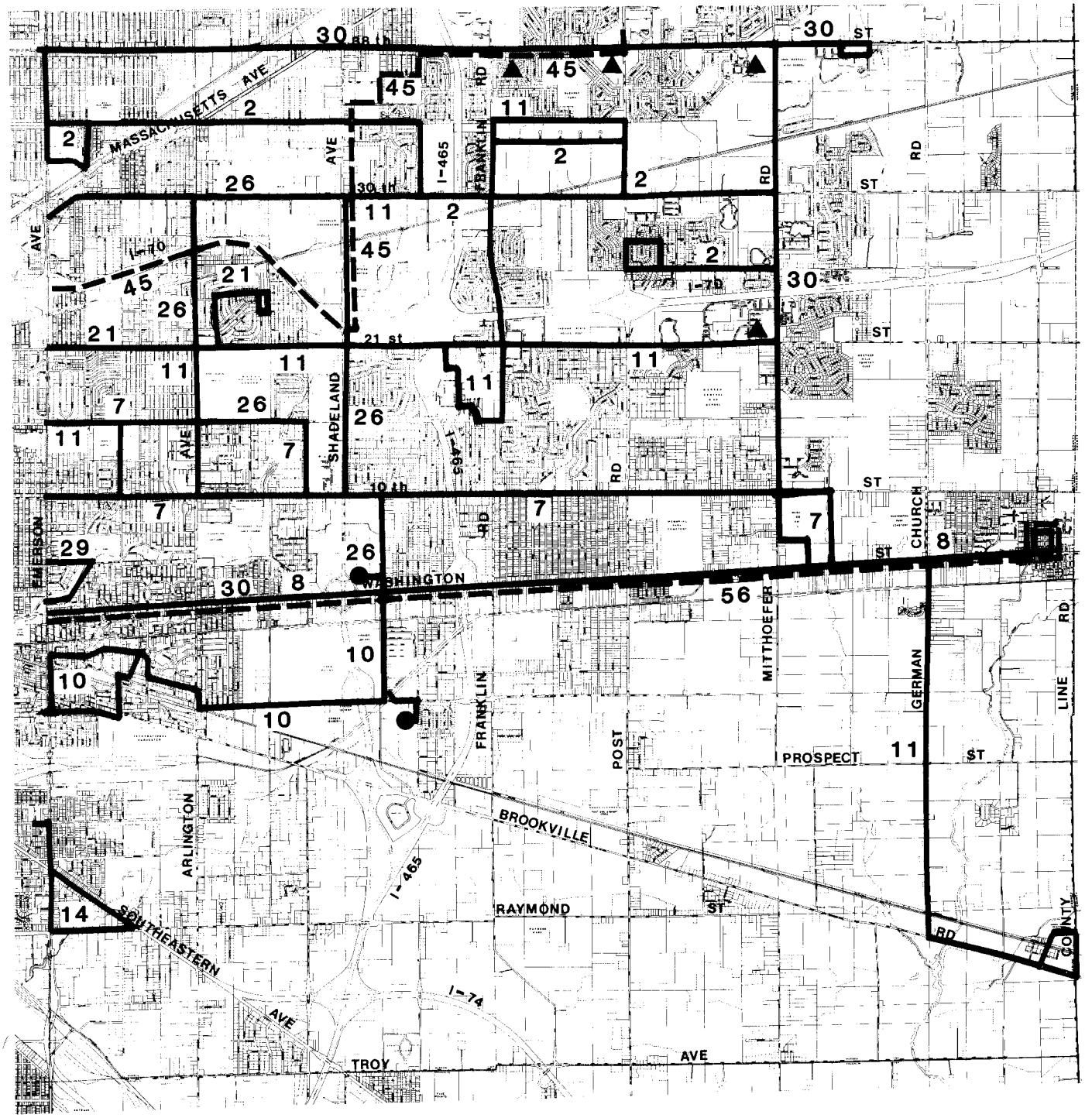
currently operates twelve bus routes which serve major residential, commercial, and retail centers within Warren Township. These routes are identified in Table 24. Of the twelve routes in the township, two are express routes and ten are local. Express routes, which operate only Monday through Friday, principally provide service for commuters in the township to and from the Central Business District (CBD). Local routes operate each day of the week and on holidays. In addition, local routes operate more frequently than the express services.

There are four Park-and-Ride locations in Warren Township. The Park-and-Ride system was designed so that individuals not having immediate access to an express route in their area can utilize METRO services by parking their cars at a specified location to board the bus (See Map 5).

Table 24

Warren Township
IPTC Routes

Route No.	Route Name	Vehicle Miles/ Route/Day	Roadway Miles/ Route
2	Central	284	12.2
4	Fort Harrison	17	3.5
7	East Tenth Street	219	8.3
8	East Washington	338	8.0
10	English	148	5.8
11	East 16th Street	375	12.4
21	Brookside	74	2.2
26	30th St. Crosstown	354	8.1
29	East Michigan	16	.7
30	Mitthoefer Crosstown	83	4.2
45	Post Road Express	39	6.4
48	Mitthoefer Express	64	7.3
56	Cumberland Express	30	8.0



WARREN TOWNSHIP

MAP 5 / BUS ROUTES

Local Routes

Express Routes

Park & Ride Lots

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Bridges

Of the 476 bridges in Marion County, 46 are located in Warren Township. Sufficiency ratings are used to describe the structural condition of bridges. The scale of sufficiency ratings for bridges ranges from 0 (worst possible condition) to 100 (optimal condition).

In 1988 Marion County had 224 Bridges with sufficiency ratings higher than 80.00, 173 bridges with sufficiency ratings between 50.00 and 80.00, and 79 bridges below 50.00. In Warren Township there are 21 bridges with sufficiency ratings of 80.00 or higher, 14 bridges with sufficiency ratings between 50.00 to 80.00, and 11 bridges below 50.00 (see Table 25 and Map 6).

High Accident Locations

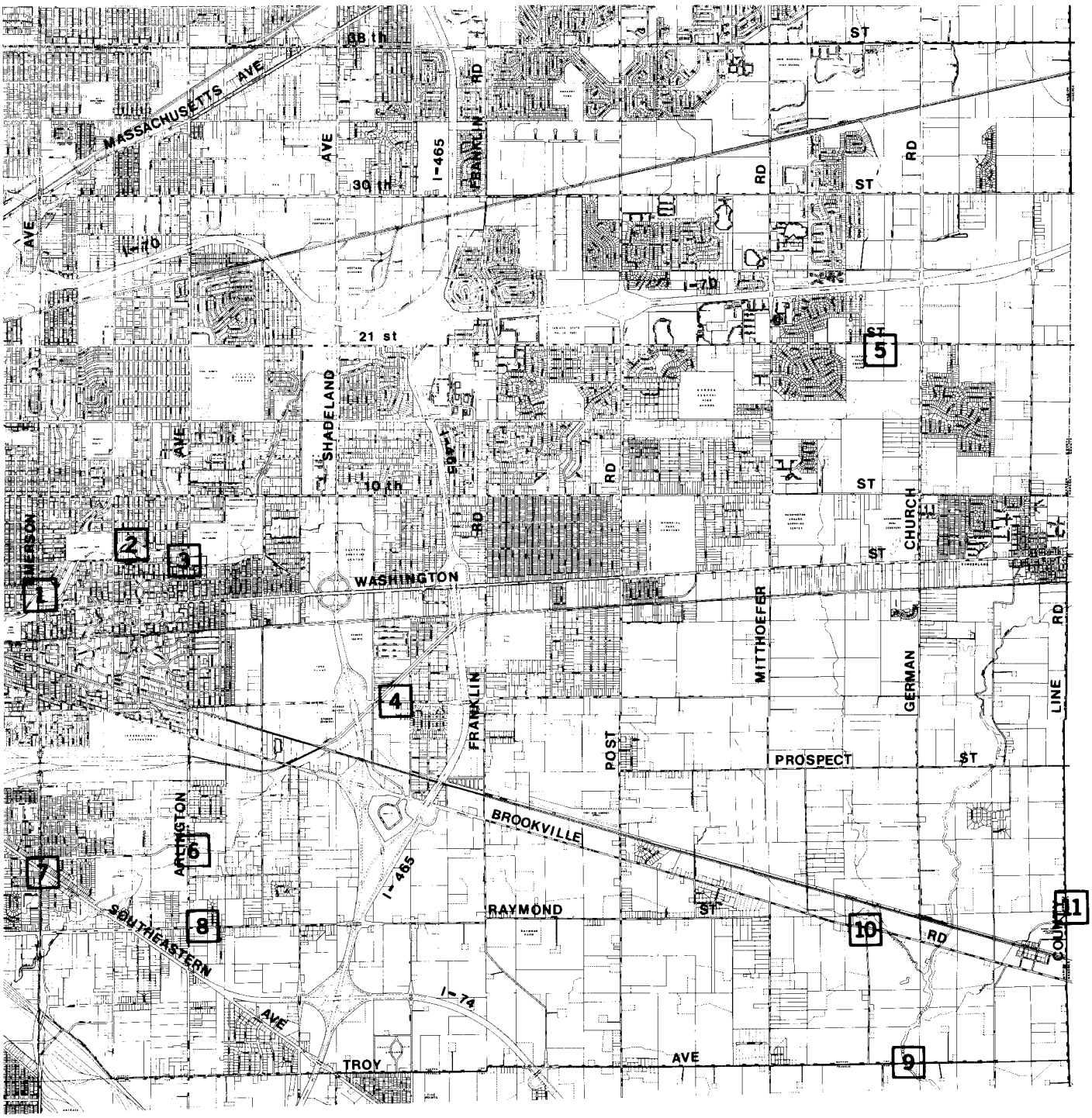
Warren Township has thirteen high accident intersections, as indicated in Table 26. Accident rates are determined by dividing the annual number of accidents by the estimated annual number of vehicles entering an intersection. That figure is then multiplied by one million to obtain a rate: the number of accidents per million vehicles. Therefore, an accident rate of 2.06 translates into an average of 2 accidents annually for an intersection averaging a volume of 1,000,000 vehicles each year.

The equation is: $$\text{Rate} = \frac{\text{(number of accidents X 1,000,000)}}{\text{(average daily traffic X 365)}}$$

Approximately 125 high accident intersections are monitored in Marion County. For planning purposes, intersections having an accident rate greater than 2.00 are identified as a "trouble spots" needing further study. In 1989, 48 Marion County intersections had an accident rate greater than 2.00. Three of these intersections were in Warren Township. As these locations are identified, they can be examined to determine what measures can be employed to increase safety. Measures such as adding left turn lanes or left turn signals, adding appropriate signage, or providing new lighting may lead to an appreciable reduction in a particular intersection's accident rate.

TABLE 25
1988 WARREN TOWNSHIP
BRIDGE SUFFICIENCY RATINGS

Facility Carried	Feature Intersected	Sufficiency Rating
E. 38th Street	Conrail Systems RR	72.20
E. 38th Street	Pogues Run	91.60
Massachussets Ave.	Pogues Run	77.40
Emerson Ave.	Emerson Ave.	95.30
E. 30th Street	Pogues Run	97.40
Emerson Ave.	Pogues Run	78.00
Emerson Ave.	Conrail Systems RR	95.70
Emerson Ave.	Brookside Creek	96.30
E. 21st Street	Brookside Creek	88.10
Emerson Ave.	Pleasant Run	38.20
Pleasant Run Pkwy.	Pleasant Run	73.30
Ritter Ave.	Pleasant Run	52.10
Pleasant Run Pkwy.	Pleasant Run	18.90
Bolton Ave.	Pleasant Run	17.00
Arlington Ave.	Pleasant Run	77.50
E. 21st Street	Pleasant Run	61.70
Franklin Rd.	Lick Creek	93.90
English Ave.	Lick Creek	49.60
16th Street	Pleasant Run	73.00
E. 10th Street	Pleasant Run	93.40
Shadeland Ave.	Pleasant Run	82.10
E. 10th Street	Grassy Creek	99.70
E. 21st Street	Grassy Creek	33.90
Co. Line Road	Buck Creek	69.20
Muessing Rd.	Buck Creek	79.90
Mitthoeffer Road	Morris Ditch	79.40
Arlington Ave.	Conrail Systems RR	90.40
Arlington Ave.	Lick Creek	24.60
Minnesota St.	Bean Creek	79.60
Emerson Ave.	Bean Creek	74.80
Southeastern Ave.	Bean Creek	23.70
Southeastern Ave.	Lick Creek	99.50
Raymond Street	Lick Creek	99.30
Raymond Street	J.E. Hall Ditch	39.50
Emerson Ave.	Lick Creek	93.80
Emerson Ave.	Conrail Systems RR	95.90
Brookville Rd.	Conrail Systems RR	95.20
Brookville Rd.	Lick Creek	91.10
Kitley Ave.	lick Creek	86.50
Shortridge Rd.	Fisher Brook	85.70
Troy Ave.	Buck Creek	39.10
Bade Road	Opossum Run	74.70
Senour Road	Zion Creek	17.70
Prospect St.	Buck Creek	81.20
Co. Line Road	Brier Creek	32.30
Prospect St.	Grassy Creek	80.50



WARREN TOWNSHIP

MAP 6 / BRIDGE SUFFICIENCY RATINGS LESS THAN 50

BRIDGE LOCATION

1 Emerson Ave. / Pleasant Run

2 Pleasant Run Pkwy. / Pleasant Run

3 Bolton Ave. / Pleasant Run

4 English Ave. / Lick Creek

5 E. 21st St. / Grassy Creek

6 Arlington Ave. / Lick Creek

7 Southeastern Ave. / Bean Creek

8 Raymond St. / J.E. Hall Ditch

9 Troy Ave. / Buck Creek

10 Senour Rd. / Zion Creek

11 County Line Rd. / Brier Creek

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TABLE 26

High Accident Intersections In Warren Township
(Number of Intersections Listed and their Ranks)

1989 Rank in Marion Co.*	1989 Rank in Warren Twp.	Intersection	1989 Accident Rate**
14	1	Post at I-70	2.75
25	2	Mitthoefer at 38th	2.48
44	3	Emerson at 30th	2.06
61	4	Post at 21st	1.71
65	5	Post at 38th	1.66
75	6	Emerson at 10th	1.51
84	7	Emerson at 38th	1.39
85	8	Arlington at 38th	1.36
86	9	Shadeland at 21st	1.34
94	10	Shadeland at 38th	1.27
99	11	Shadeland at 10th	1.17
101	12	Brookville at Ritter	1.14
106	13	Mitthoeffer at 25th	1.04

* 125 intersections are ranked, 1 representing the highest accident rate and 125 representing the lowest rate of the intersections ranked.

** Total accidents per million vehicles entering the intersection annually.

NEEDS ASSESSMENT

The management of the Indianapolis transportation system is based on the allocation of limited resources--there are more needs associated with the transportation system than money available to make all the desired improvements. The purpose of the City's transportation planning process is to assess the needs associated with the transportation system and develop a systematic program to allocate the limited financial resources.

Description of Transportation Planning Process

Needed transportation projects are documented in the Indianapolis Regional Transportation Improvement Program (IRTIP), which is prepared annually. It identifies a five-year program of proposed transportation projects in the Indianapolis urbanized area.

The transportation planning program in the Indianapolis area is comprised of two major elements: Long-Range Transportation Planning and Transportation System Management (TSM) Planning, which identifies short-range transportation improvements.

The Long-Range Transportation Planning element prepares and maintains the plan for transportation needs twenty years into the future, and recommends the needed roadway improvements including street widenings, bridges, and new roadways. Placing a recommended roadway improvement project into the Official Thoroughfare Plan for Marion County does not ensure its construction. However, in order for the improvement to be constructed using federal funds, it must be included as part of the official plan. Actual construction of a project is subject to funding availability, an impact study, and community review. There are 1,040 miles of roadway on the Thoroughfare Plan (see Maps 7 and 8).

The TSM, or short-range planning element, addresses low-cost projects designed to obtain maximum productivity from the existing transportation system. Projects associated with this element include intersection improvements, signage and lighting improvements, modernizing traffic signals, and operational changes such as restrictions for on-street parking.

Projects planned for both the short-range and long-range transportation planning programs are contained in the "Planned Improvements" section. In this Needs Assessment section, only the long-range planning process is discussed.

In planning for Warren Township's roadway system, it is necessary to analyze both the physical configuration of the existing street network and the roadway's current and future traffic demand in relationship to its carrying capacity. The relationship is expressed as a measurement of level-of-service. Both are described in the following sections.

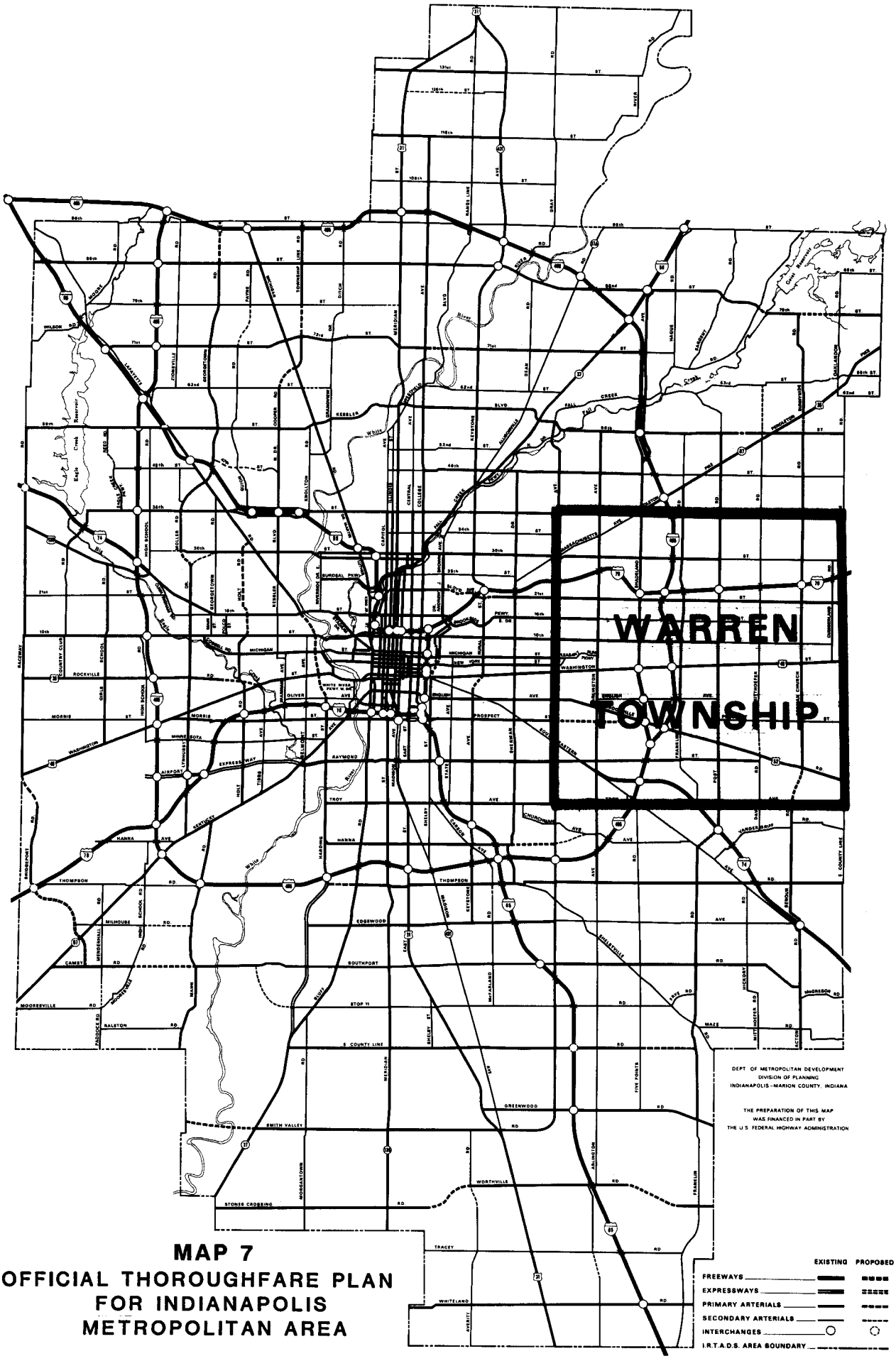
Street Network

The Indianapolis roadway network, including Warren Township, represents a combination of two basic configurations--a spoked-wheel pattern and a basic grid system of regular squares or rectangular blocks. Ideally there would be equal spacing between each roadway in a grid pattern.

Planning new roads and improving existing roads is done with consideration of the need to maximize the efficiency of the street network configuration. Street pattern improvements bring an increased continuity of service to the system, resulting in increased accessibility and safety, and reduced travel time and energy consumption.

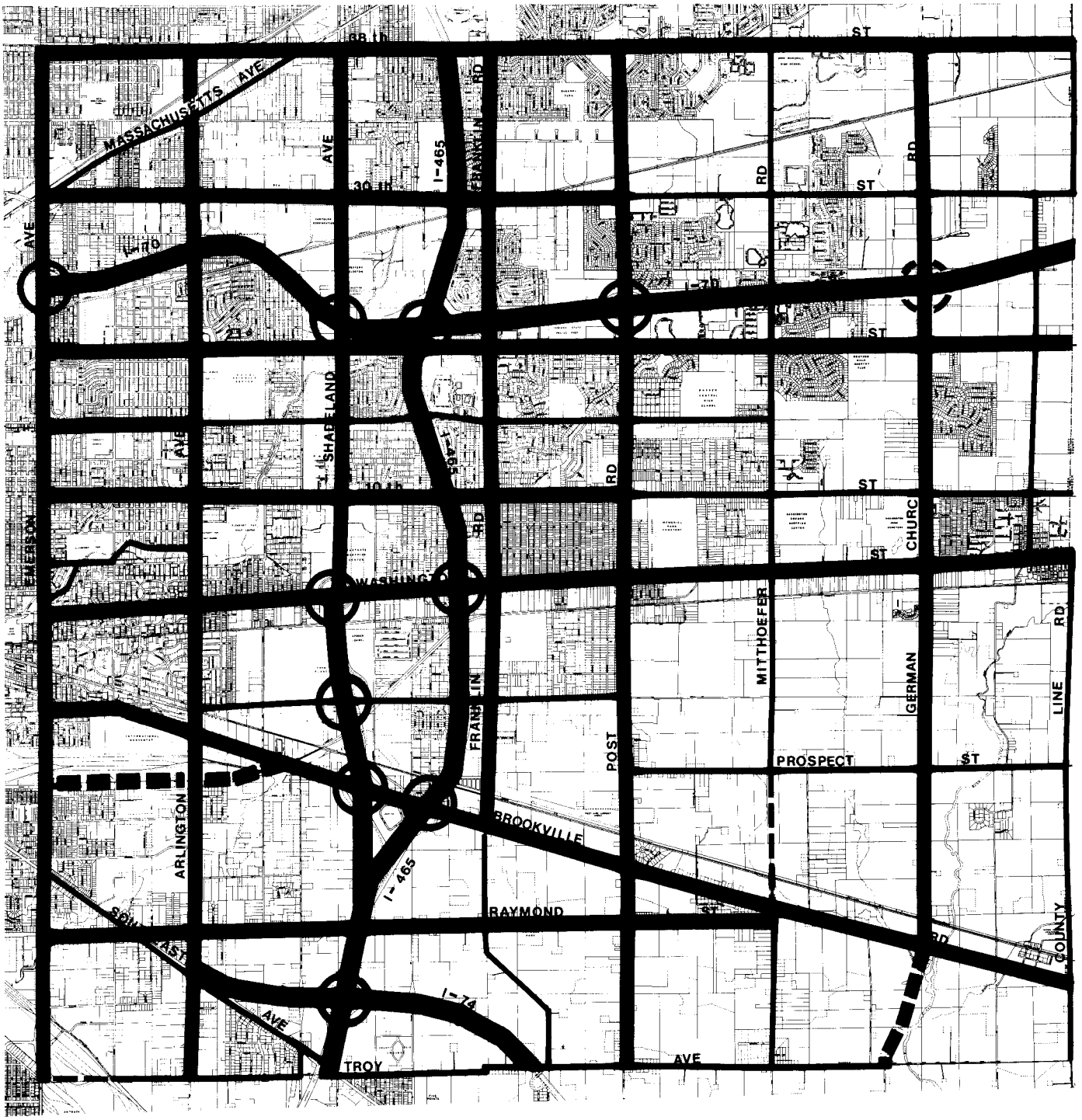
Carrying Capacity and Level-of-Service

Levels-of-service (LOS) are qualitative measurements of congestion based on the operational characteristics of a roadway in terms of travel speed and delays. Levels-of-service are used to identify deficiencies in the roadway network. Six levels of service are defined and used to analyze transportation facilities. The six levels of service are designated from A to



MAP 7

OFFICIAL THOROUGHFARE PLAN FOR INDIANAPOLIS METROPOLITAN AREA



WARREN TOWNSHIP

MAP 8 / OFFICIAL THOROUGHFARE PLAN

EXISTING		PROPOSED
	Freeway	None
	Primary Arterials	
	Secondary Arterials	
	Interchanges	

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F, with level-of-service F representing the worst congestion. Each level-of-service is depicted in Figure 23. A level-of-service E or F would indicate that a roadway segment is carrying more traffic than it is designed to carry. Either the network would need to be improved to divert traffic from this segment or the segment itself would need to be improved to increase its capacity.

The latter could be accomplished by adding additional travel lanes or making operational improvements such as intersection widenings and signal timing improvements.

Level-of-Service Definitions

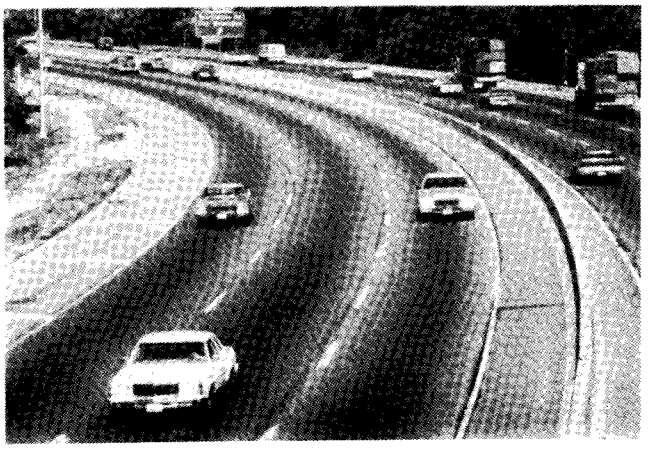
1. Level-of-service "A" represents free flow. Individual users are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speeds and to maneuver within the traffic stream is extremely high. The general level of comfort and convenience provided to the motorist, passenger, or pedestrian is excellent.

2. Level-of-service "B" is in the range of stable flow, but the presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver within the traffic stream from LOS A. The level of comfort and convenience provided is somewhat less than at LOS A, because the presence of others in the traffic stream begins to affect individual behavior.

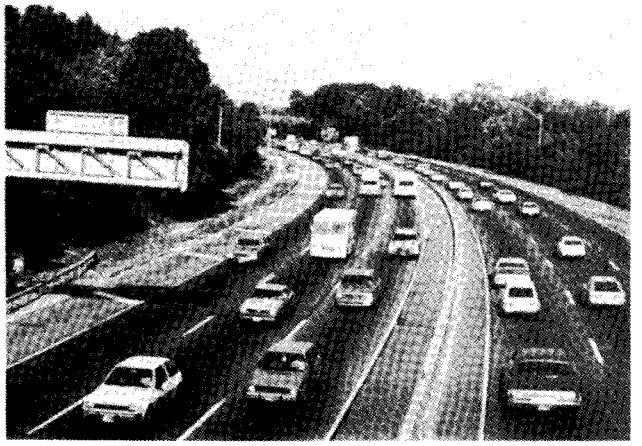
3. Level-of-service "C" is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream. The selection of speed is now affected by the presence of others, and maneuvering within the traffic stream requires substantial vigilance on the part of the user. The general level of comfort and convenience declines noticeably at this level.

4. Level-of-service "D" represents high-density, but stable, flow. Speed and freedom to maneuver are severely restricted, and the driver or pedestrian experiences a generally poor level of comfort and convenience. Small increases in traffic flow will generally cause operational problems at this level.

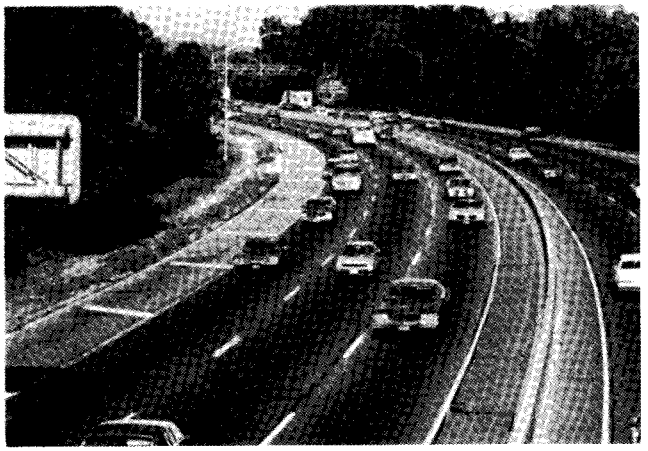
5. Level-of-service "E" represents operating conditions at or near the capacity level. All speeds are reduced to a low but relatively uniform value. Freedom to maneuver within the traffic stream is extremely difficult, and it is generally accomplished by forcing a vehicle or pedestrian to "give way" to accommodate



Level-of-service A.



Level-of-service D.



Level-of-service B.

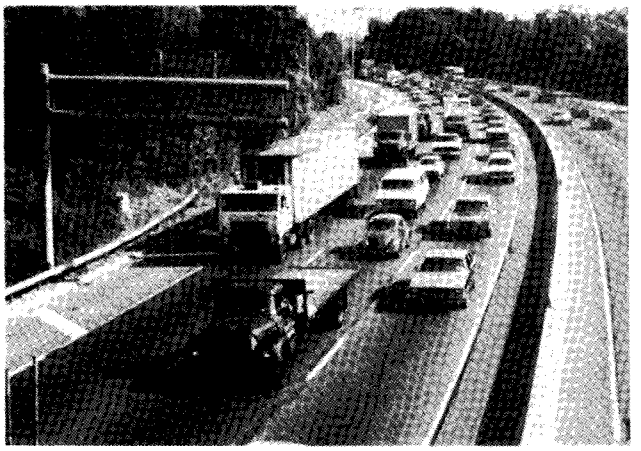


Illustration 3-9. Level-of-service E.

Level-of-service C.

Level-of-service F.

Figure 23

LEVEL-OF-SERVICE ILLUSTRATIONS

SOURCE: HIGHWAY CAPACITY MANUAL, 1985

such maneuvers. Comfort and convenience levels are extremely poor, and driver or pedestrian frustration is generally high. Operations at this level are usually unstable, because small increases in flow or minor perturbations within the traffic stream will cause breakdowns.

6. Level-of-service "F" is used to define forced or breakdown flow. This condition exists wherever the amount of traffic approaching a point exceeds the amount which can traverse the point. Queues form behind such locations. Operations within the queue are characterized by stop-and-go waves, and they are extremely unstable. Vehicles may progress at reasonable speeds for several hundred feet or more, then be required to stop in a cyclic fashion. Level-of-service F is used to describe the operating conditions within the queue, as well as the point of the breakdown. It should be noted, however, that in many cases operating conditions of vehicles or pedestrians discharged from the queue may be quite good. Nevertheless, it is the point at which arrival flow exceeds discharge flow which causes the queue to form, and level-of-service F is an appropriate designation for such points.

(These definitions are from the Highway Capacity Manual, Special Report 209, the Federal Highway Administration.)

Forecasting Future Travel Demand

The most complex part of the urban transportation planning process is the forecasting of future travel demand. Essentially, this process involves establishing a relationship between travel characteristics and land use activities such as housing and employment. The process relies on mathematical computer models of trip generation, trip distribution, mode choice, and trip assignment, each of which are summarized below:

- Trip generation is the process of estimating the number of trips generated by various urban activities. For example, the number of trips that are generated by a shopping center is quite different from the number of trips generated by a residential subdivision.

- The trip distribution model determines how the beginning and endings of these trips are linked with one another.

- The mode choice model predicts how travel will be split between automobiles and bus service.

- The trip assignment model determines the paths the trips will take. For example, if a trip goes from a suburb to downtown, the model predicts which specific roads or transit routes are used.

These modeling procedures are used to forecast future travel demand and thereby identify future deficiencies in the street system. The overall model generates these forecasts in terms of the volume of traffic in relation to roadway capacity.

WARREN TOWNSHIP ROADWAY NETWORK PERFORMANCE

Table 27 and Maps 9 and 10 identify the current levels-of-service and projected levels-of-service for the year 2005 for Warren Township during the peak hour when the greatest demand is placed on the transportation system. These are general levels-of-service and do not reflect existing or future intersection characteristics such as exclusive right and left turn lanes or passing blisters, which significantly improve traffic operations.

Map 11 identifies the long range priority improvements proposed for the street system within Warren Township.

The existing levels-of-service were computed using the most recent traffic count data available, which ranged from 1983 to 1989. The year 2005 levels-of-service were computed with the assumption that all of the Thoroughfare Plan priority improvements would be completed by 2005.

Overall, the Warren Township street system is currently operating at a high level of service. Of the streets on the Official Thoroughfare Plan system, 88% are operating at level-of-service A, B, C, or D. The majority of streets that are operating at a level-of-service E-F are located in the northwest quadrant of the Township.

It is estimated that the percentage of roadway miles operating at acceptable levels-of-service A-D will increase from 88% to 90%. Therefore, congestion is forecast to decrease below today's rates if planned priority improvements are implemented.

TABLE 27

WARREN TOWNSHIP
LEVEL-OF-SERVICE (LOS) ANALYSIS

(By Percent of Township Thoroughfare System*)

Existing LOS (1988)		Future LOS (Year 2005)	
A-D	E-F	A-D	E-F
88%	12%	90%	10%

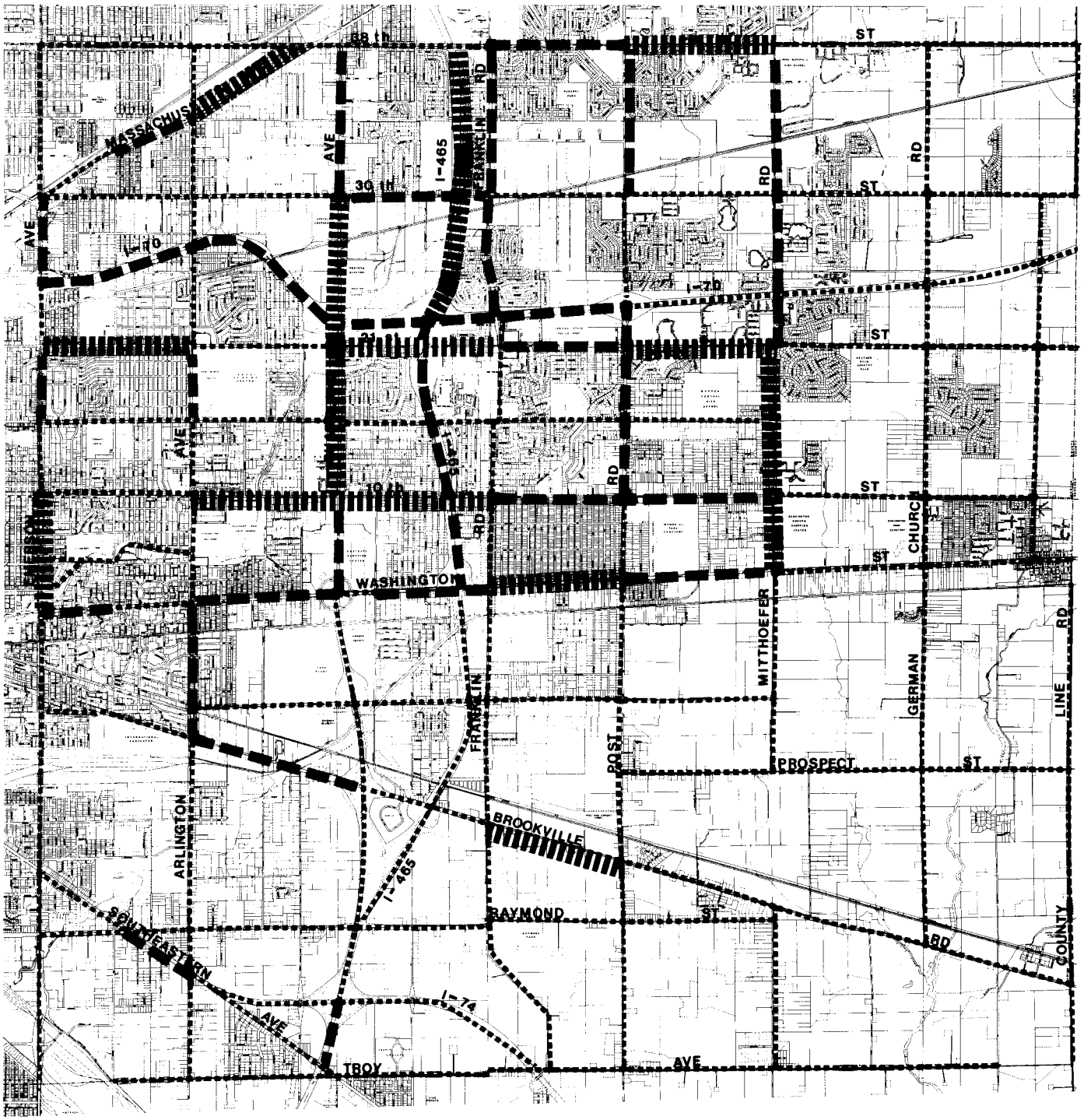
* Assumes priority improvements will be implemented.

PROGRAMMED IMPROVEMENTS

Transportation improvements are programmed through the Indianapolis Regional Transportation Improvement Program (IRTIP). The IRTIP presents transportation improvements proposed by government and transportation agencies in the Indianapolis Urbanized Area. The basic objective of the IRTIP is to provide the best attainable coordinated transportation system.

There are two planning elements that provide the principal evaluation methods for programming projects in the IRTIP. The Long-Range Transportation Plan is a plan that implements long-range transportation objectives and facilitates improvements that increase the overall capacity of the Indianapolis Transportation System. The Transportation System Management Process System Report plans short-range objectives that address current trouble spots in the transportation system. An example of a long-range transportation improvement would be the proposed connection linking Mitthoefer Road to Davis Road. An example of a programmed short-range project is the intersection improvement and signal modernization of U.S. 40 at Franklin Road.

The list which follows Map 11 presents a summary of the transportation projects proposed in Warren Township during the 1990-1994 IRTIP program period (see Table 28). It includes (1) Long-range Plan Improvements, (2) Transportation System Management Improvements, (3) Bridge Improvements, and (4) other improvements. The total projected cost of all projects proposed for Warren Township during 1990-1994 period is approximately $32,500,000. Locations of these various improvements are shown on Maps 12 through 15.



WARREN TOWNSHIP

MAP 9 / EXISTING LEVELS OF SERVICE

..... LOS of "A" or "B"

▬ ▬ ▬ LOS of "C" or "D"

▮▮▮▮▮▮▮▮▮▮▮▮ LOS of "E" or "F"

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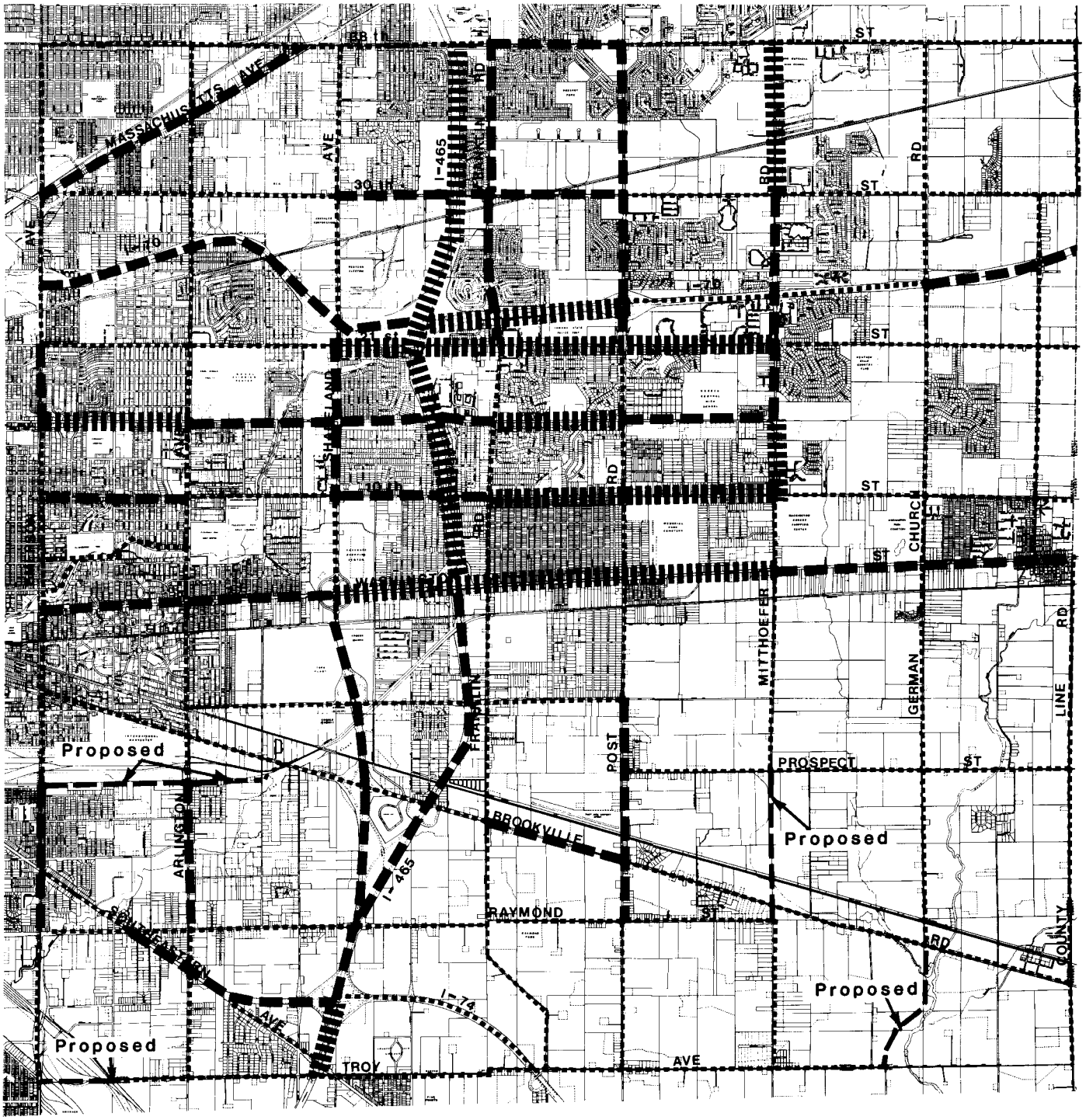

WARREN TOWNSHIP

MAP 10 / PROJECTED LEVELS OF SERVICE YEAR 2005

..... LOS of "A" or "B"

▬ ▬ ▬ LOS of "C" or "D"

▮▮▮▮▮▮▮▮▮▮▮▮ LOS of "E" or "F"

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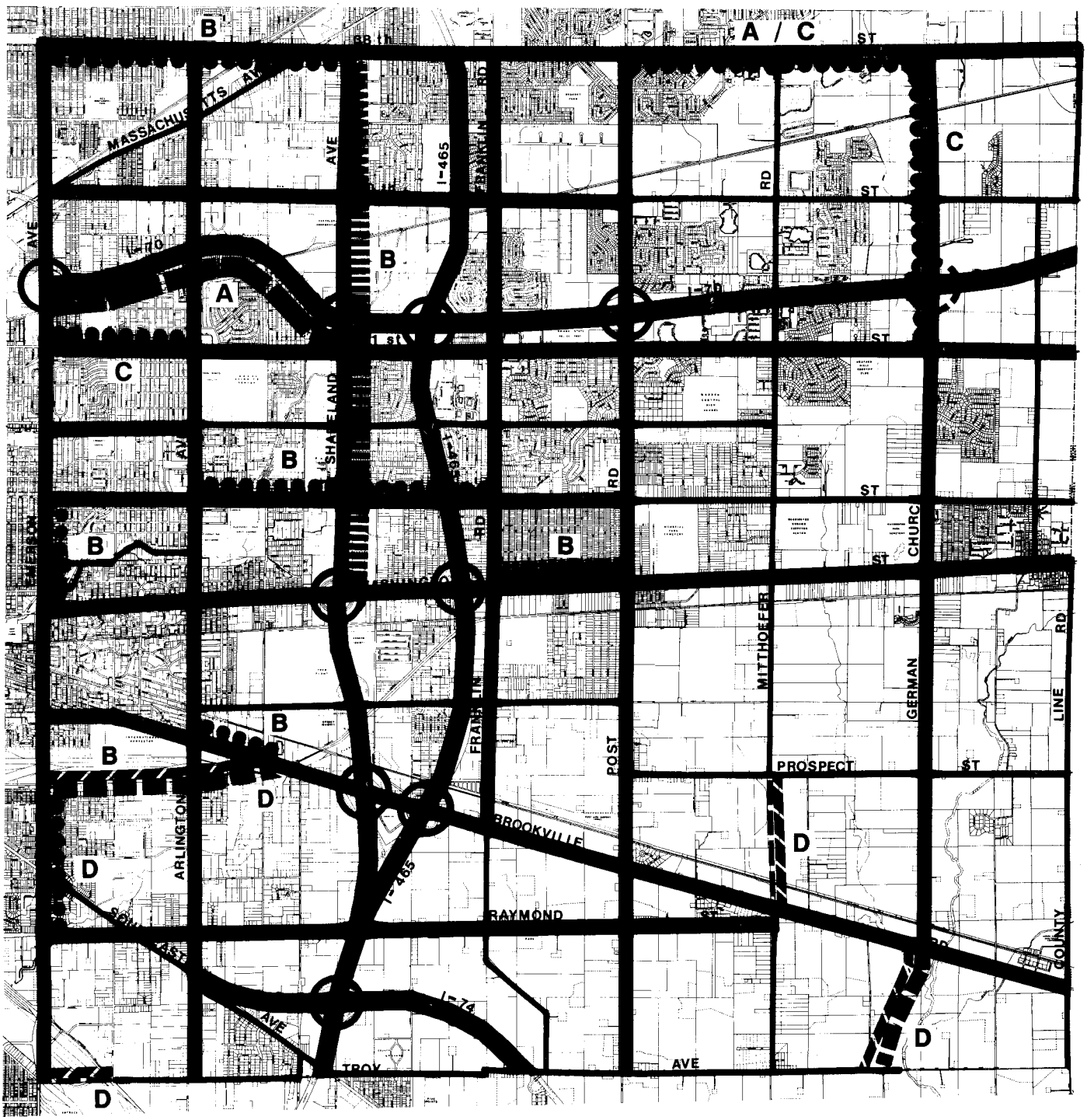

WARREN TOWNSHIP

MAP 11 / THOROUGHFARE PLAN PRIORITY IMPROVEMENTS

THOROUGHFARE PLAN IMPROVEMENTS	RECOMMENDED IMPLEMENTATION
New or Improved to 2 Lanes	A 1987 - 1991
New or Improved to 4 Lanes	B 1992 - 1996
New or Improved to 6 Lanes	C 1997 - 2001
New or Improved to 8 Lanes	D 2002 - 2005

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TABLE 28

PLANNED ROADWAY AND INTERSECTION IMPROVEMENTS

1990-1994 IRTIP Road Widening and Roadway Improvements
(see Map 12)

DOT 2053	INTERSECTION IMPROVEMENT
LOCATION:	East 25th Street and Mitthoeffer Road
DESCRIPTION:	Intersection widening of all four approaches to three lanes with the possibility of right turn lanes.
CONSTRUCTION:	Programmed for 1994
TOTAL AMOUNT:	$930,000

DOT 3071	ROADWAY WIDENING
LOCATION:	East 21st Street, Emerson Avenue to Arlington Avenue
DESCRIPTION:	Widening of existing facility to a four lane undivided roadway from Emerson Avenue to Arlington Avenue with turn lanes at Ritter Avenue.
CONSTRUCTION:	Programmed for 1993
TOTAL AMOUNT:	$3,825,000

DOT 3075	ROADWAY WIDENING
LOCATION:	East 21st Street, Shadeland Avenue to Post Road
DESCRIPTION:	Widening of existing facility to a five lane roadway from Shadeland Avenue to Post Road.
CONSTRUCTION:	Programmed for 1992
TOTAL AMOUNT:	$6,000,000

DOT 3127	ROADWAY WIDENING
LOCATION:	German Church Road, Washington St. to Pendleton Pike
DESCRIPTION:	Widening of existing facility to a four lane divided roadway.
CONSTRUCTION:	None - within 5 years
TOTAL AMOUNT:	$400,000

TSM Intersection, Signalization Realignment and Lighting Improvements
(see Map 13)

IDH 1004	INTERSECTION IMPROVEMENT
LOCATION:	I-70 at Post Road
DESCRIPTION:	Interchange modification between I-70 and Post Road.
CONSTRUCTION:	Programmed for 1993
TOTAL AMOUNT:	$1,786,000

IDH 2032	INTERSECTION IMPROVEMENT
LOCATION:	US 40 at Franklin Road
DESCRIPTION:	Intersection improvement and signal modernization.
CONSTRUCTION:	Programmed for 1991
TOTAL AMOUNT:	$175,000

TABLE 28, CONTINUED

IDH 2036 SAFETY IMPROVEMENTS
LOCATION: I-70, Sherman Drive to Ritter Avenue
DESCRIPTION: Lighting improvements on I-70 from Sherman to Ritter.
CONSTRUCTION: Programmed for 1990
TOTAL AMOUNT: $33,000

IDH 2037 SAFETY IMPROVEMENTS
LOCATION: I-70 at Emerson Avenue
DESCRIPTION: Lighting improvements on I-70 at Emerson Ave. interchange.
CONSTRUCTION: Programmed for 1990
TOTAL AMOUNT: $82,000

Interstate Highway Resurfacing and Rehabilitation Projects
(see Map 14)

IDH 1017 ROADWAY RECONSTRUCTION
LOCATION: I-70, Post Road to SR 9
DESCRIPTION: Interstate reconstruction on I-70(east) from Post Rd. in Marion County to SR 9 in Hancock County (12.9 miles).
CONSTRUCTION: Programmed for 1992
TOTAL AMOUNT: $9,845,000

IDH 1097 ROADWAY IMPROVEMENT
LOCATION: SR 100, I-465 TO US 40
DESCRIPTION: Roadway re-surfacing on SR 100 (Shadeland Ave.) from I-465 to US 40.
CONSTRUCTION: Programmed for 1990
TOTAL AMOUNT: $256,000

IDH 2023 ROADWAY IMPROVEMENT
LOCATION: I-465, I-70 TO US 52
DESCRIPTION: Roadway resurfacing on I-465 from I-70 south to 0.5 miles south of US 52 (4.4 miles).
CONSTRUCTION: Programmed for 1992
TOTAL AMOUNT: $4,508,000

BRIDGE IMPROVEMENTS
(see Map 15)

DOT 2070 BRIDGE REHABILITATION
LOCATION: East 21st Street over Grassy Creek
DESCRIPTION: Rehabilitation of the existing structure and approaches.
CONSTRUCTION: Programmed for 1991
TOTAL AMOUNT: $650,000

TABLE 28, CONTINUED

DOT 3034	BRIDGE REHABILITATION
LOCATION:	Emerson Avenue over Pogue's Run
DESCRIPTION:	Rehabilitation of existing structure on Emerson Avenue and minimum approach reconstruction.
CONSTRUCTION:	Programmed for 1990
TOTAL AMOUNT:	$320,000
DOT 3039	BRIDGE REPLACEMENT
LOCATION:	Emerson Avenue over Pleasant Run
DESCRIPTION:	Replacement of existing structure and widening of bridge on Emerson Avenue over Pleasant Run.
CONSTRUCTION:	Programmed for 1992
TOTAL AMOUNT:	$575,000
DOT 3067	BRIDGE REPLACEMENT
LOCATION:	Senour Road over Zion Creek
DESCRIPTION:	Replacement of existing structure over Zion Creek.
CONSTRUCTION:	Programmed for 1990
TOTAL AMOUNT:	$400,000
DOT 3111	BRIDGE REPLACEMENT
LOCATION:	East County Line Road over Brier Creek.
DESCRIPTION:	Replacement of existing structure over Brier Creek.
CONSTRUCTION:	Programmed for 1992
TOTAL AMOUNT:	$575,000
DOT 3114	BRIDGE REHABILITATION
LOCATION:	South Arlingtion Avenue over Lick Creek
DESCRIPTION:	Rehabilitation of existing bridge and approaches.
CONSTRUCTION:	Programmed for 1991
TOTAL AMOUNT:	$300,000
IDH 1080	BRIDGE REHABILITATION
LOCATION:	I-465 over East 21st Street
DESCRIPTION:	Bridge reconstruction on I-465 over East 21st Street, 0.2 miles south of I-70.
CONSTRUCTION:	Programmed for 1992
TOTAL AMOUNT:	$221,000
IDH 1081	BRIDGE REHABILITATION
LOCATION:	I-465 over East 21st Street
DESCRIPTION:	Bridge reconstruction on ramp from northbound I-465 to eastbound I-70 over East 21st Street.
CONSTRUCTION:	Programmed for 1992
TOTAL AMOUNT:	$105,000
IDH 1082	BRIDGE REHABILITATION
LOCATION:	I-465 over East 21st Street
DESCRIPTION:	Bridge reconstruction on ramp from eastbound I-70 to southbound I-465 over East 21st Street.
CONSTRUCTION:	Programmed for 1992
TOTAL AMOUNT:	$109,000

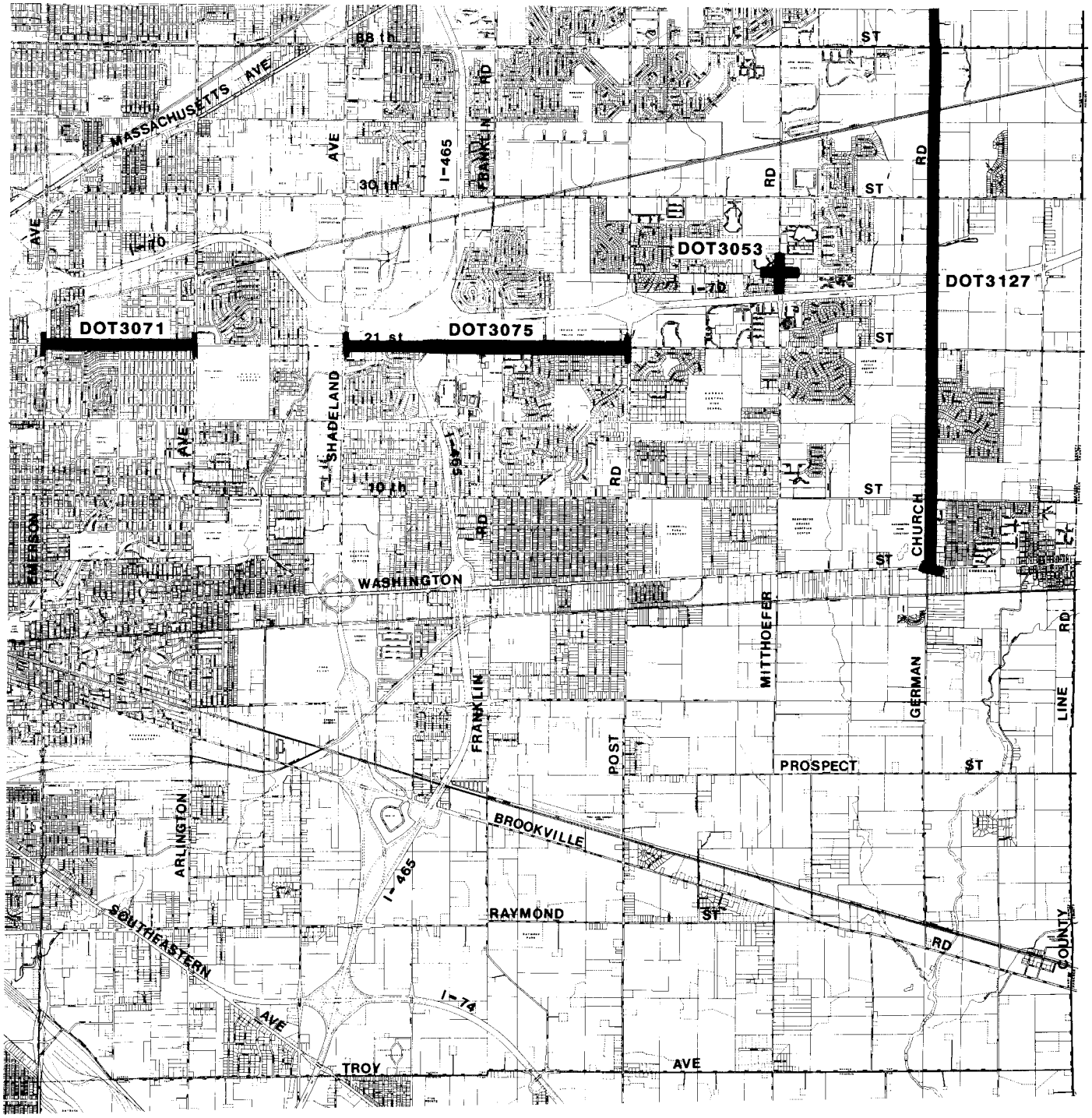
TABLE 28, CONTINUED

IDH 1083	BRIDGE REHABILITATION
LOCATION:	I-465 over East 10th Street
DESCRIPTION:	Bridge reconstruction on I-465 over East 10th Street, 0.6 miles north of US 40.
CONSTRUCTION:	Programmed for 1992
TOTAL AMOUNT:	$181,000
IDH 1084	BRIDGE REHABILITATION
LOCATION:	I-465 over US 40
DESCRIPTION:	Bridge reconstruction on I-465 over US 40 (east).
CONSTRUCTION:	Programmed for 1992
TOTAL AMOUNT:	$271,000
IDH 1085	BRIDGE REHABILITATION
LOCATION:	I-465 over abandoned railroad.
DESCRIPTION:	Bridge reconstruction on I-465 over abandoned railroad, 0.2 miles south of US 40.
CONSTRUCTION:	Programmed for 1992
TOTAL AMOUNT:	$180,000
IDH 1086	BRIDGE REHABILITATION
LOCATION:	I-465 over CRC Railroad
DESCRIPTION:	Bridge reconstruction on I-465 over CRC Railroad, 0.2 miles south of US 40 (east).
CONSTUCTION:	Programmed for 1992
TOTAL AMOUNT:	$195,000
IDH 1087	BRIDGE REHABILITATION
LOCATION:	I-465 over B&O Railroad
DESCRIPTION:	Bridge reconstruction on I-465 over B&O Railroad, 0.2 miles north of US 52 (east).
CONSTRUCTION:	Programmed for 1992
TOTAL AMOUNT:	$190,000
IDH 1088	BRIDGE REHABILITATION
LOCATION:	I-465 over US 52
DESCRIPTION:	Bridge reconstruction on I-465 over US 52 (east).
CONSTRUCTION:	Programmed for 1992
TOTAL AMOUNT:	$341,000

---

*Please note that the anticipated construction years for the projects have been provided by the Indianapolis Department of Transportation and are subject to change based upon availability of federal and local funds.

SOURCE: Indianapolis Regional Transportation Improvement Program, 1990-1994; Departments of Transportation, and Metropolitan Development (Division of Planning).



WARREN TOWNSHIP

MAP 12 / 1990-1994 IRTIP ROAD WIDENING AND ROADWAY IMPROVEMENT PROJECTS

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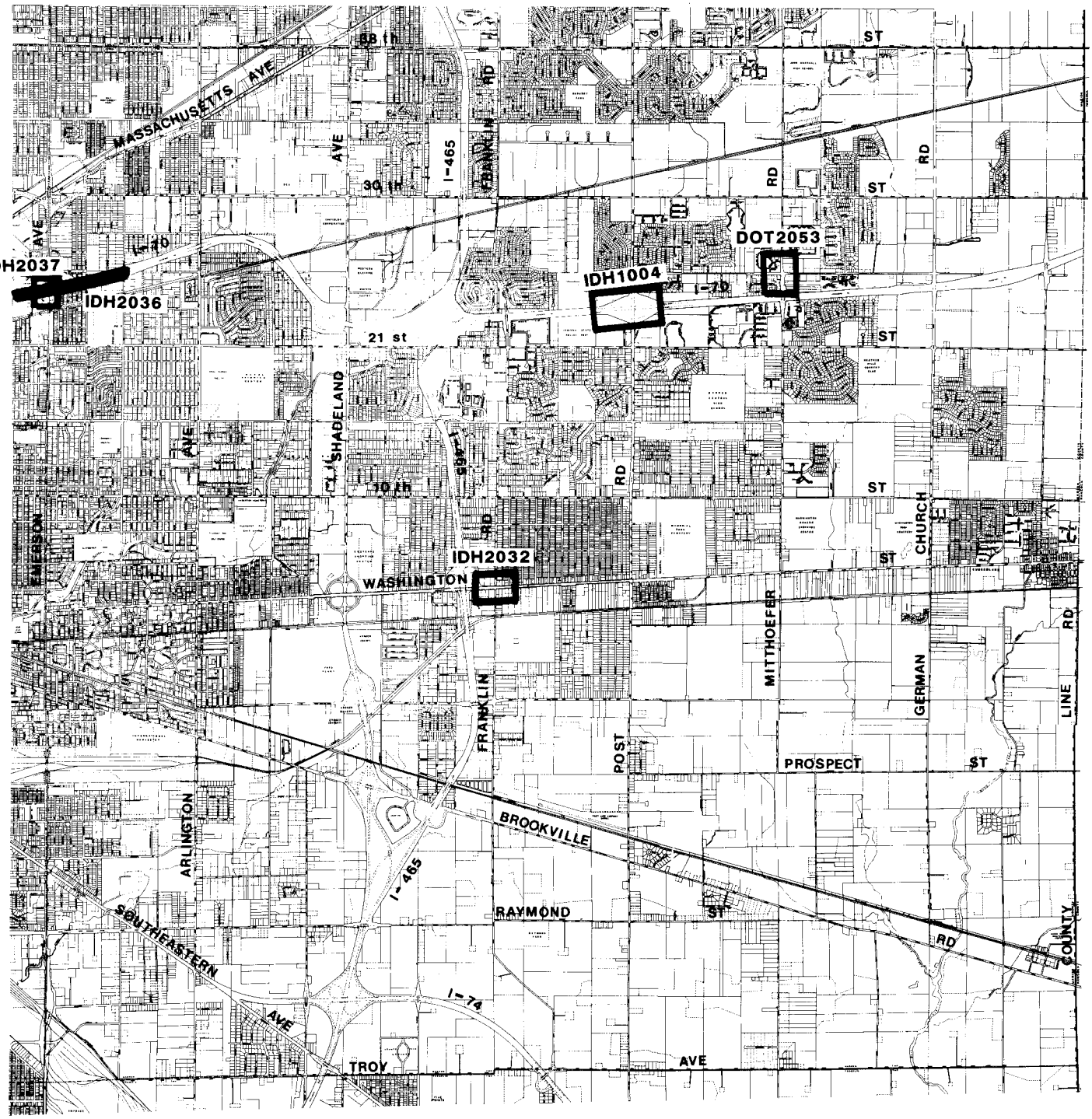

WARREN TOWNSHIP

MAP 13 / TSM PROJECTS: INTERSECTIONS, SIGNALIZATION, REALIGNMENT, & LIGHTING IMPROVEMENTS 1990-1994

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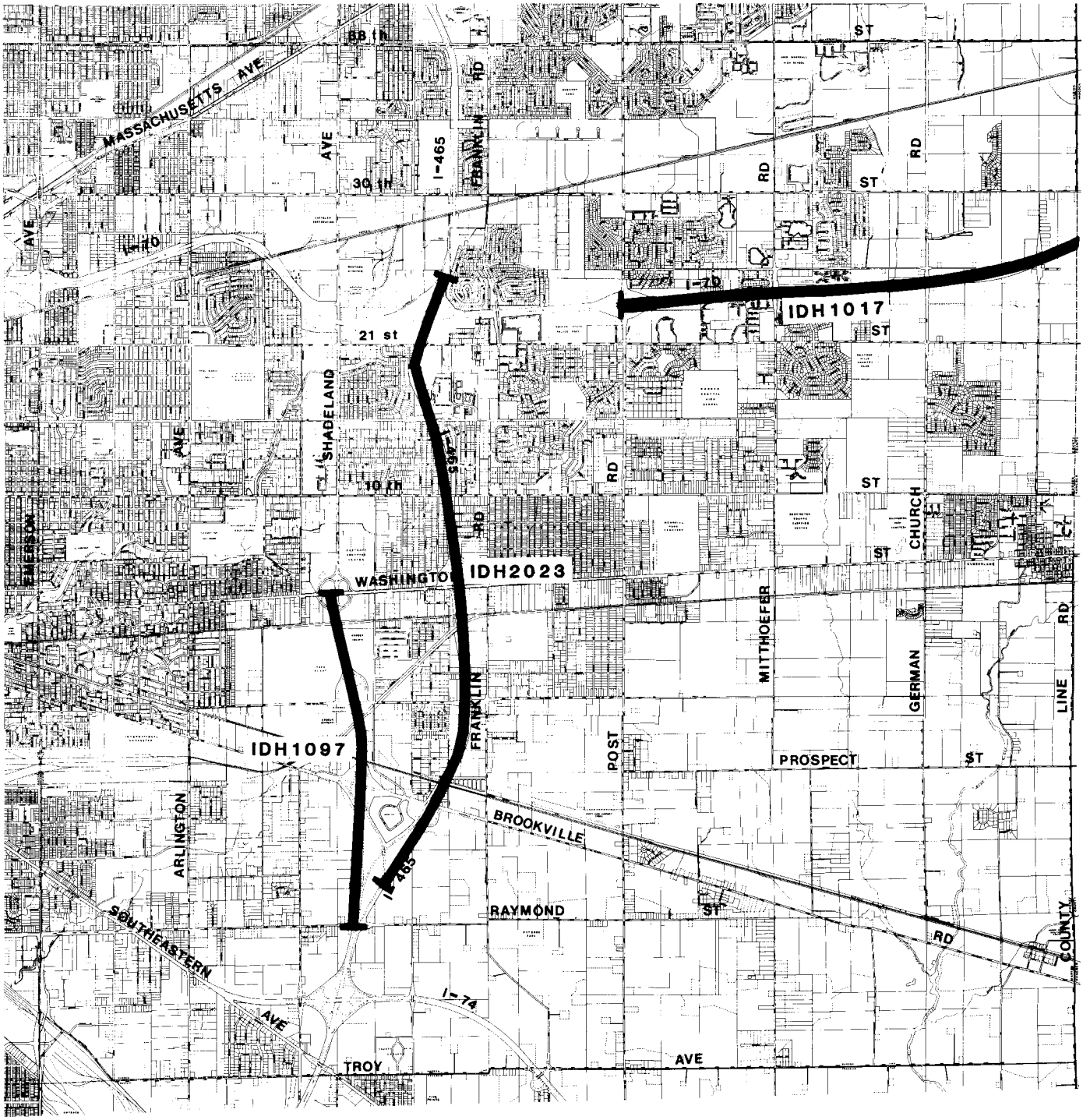

WARREN TOWNSHIP

MAP 14 / 1990-1994 INTERSTATE HIGHWAY RESURFACING & REHABILITATION PROJECTS

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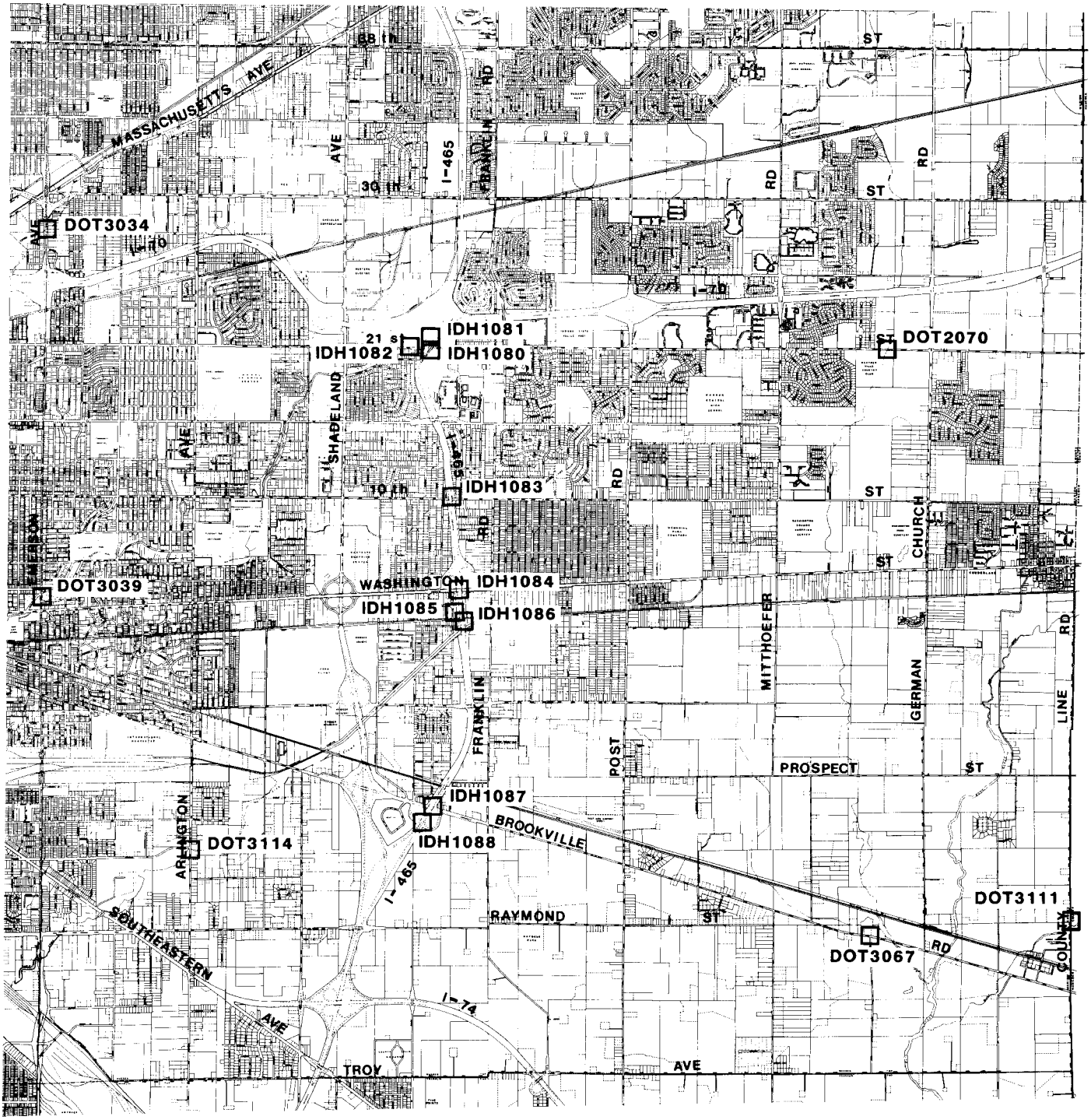

WARREN TOWNSHIP

MAP 15 / BRIDGE IMPROVEMENTS

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CHAPTER 7

WARREN TOWNSHIP SCHOOLS AND COMMUNITY SERVICES

SCHOOL SYSTEMS

Warren Township contains two public school districts: a portion of the Indianapolis Public School (IPS) District and the Metropolitan School District of Warren Township (MSDWT). In addition, five parochial elementary schools are located in Warren Township, each offering education through the eighth grade (see Map 16).

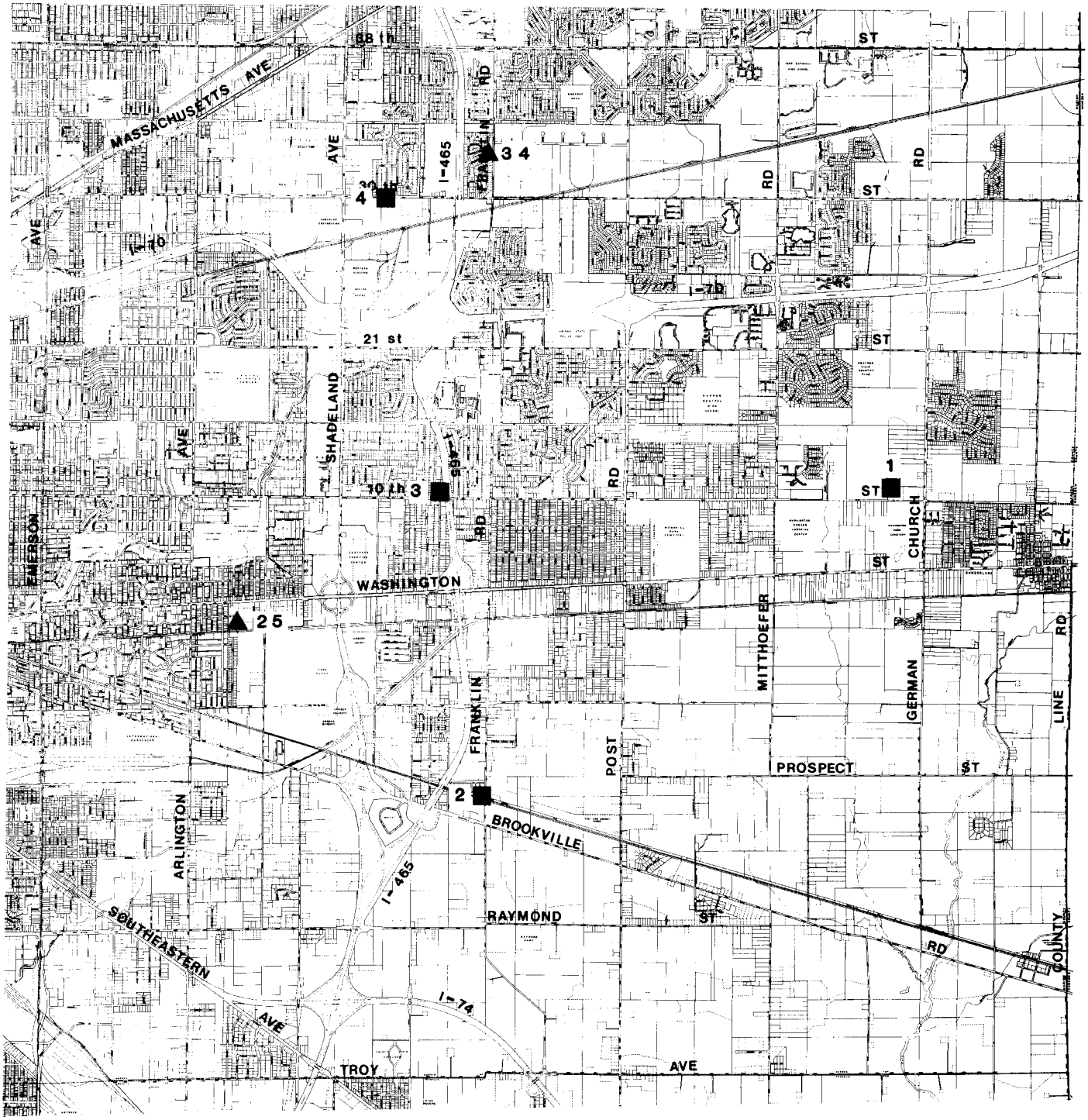
The IPS District boundaries are basically those of the old Indianapolis incorporated city: they generally extend east from Center Township to Edmondson Avenue and south from Lawrence Township to 30th Street, with a three-block-wide section extending south from 30th Street to I-70.

The IPS District schools in Warren Township, taken as a whole, experienced steadily declining enrollments in the 1980s (see Table 29). Between the decade-high 5,876 students in 1980 and the 5,266 in 1985, only a mild upsurge in 1983 arrested the falling enrollments. The greatest decrease, a 13% dropoff in IPS school enrollment between 1985 and 1986, coincided with IPS redistricting. Since 1986, total IPS enrollment in Warren Township has decreased only 5%. Estimates for the 1990-91 school year place total enrollment at almost the same level as the 4,371 students in September 1989. Although Schools 93 and 98 are at less than 60% capacity, no IPS school closings are planned in Warren Township in the near future.

Similar to the IPS trend, MSDWT school enrollment was at its decade-high of 10,008 in 1981 only to lose nearly 700 students over the next seven years, for a 9% drop in enrollment (see Table 29). Since 1982, however, enrollment has not dropped by more than 2% in any single year. In fact, MSDWT is now projecting a slight increase in the total enrollment, from 9,076 in September 1989 to 9,177 in September 1990. The MSDWT administration anticipates no school openings or closings in the near future. MSDWT does plan, however, to change Creston and Stonybrook from junior high schools (grades 7-8) to middle schools (grades 6-8) and Warren Central from a three-year school (grades 10-12) to a four-year school (grades 9-12) in 1993.

PUBLIC SAFETY

Warren Township public safety services are comprised of fire protection services, emergency medical services, and police protection services.



WARREN TOWNSHIP

MAP 17 / FIRE STATION LOCATIONS

■ WARREN TOWNSHIP

Station 1 10075 E. 10th St.

Station 2 1302 S. Franklin

Station 3 7604 E. 10th St.

Station 4 7301 E. 30th St.

▲ CITY OF INDIANAPOLIS

Station 25 17 S. Sheridan

Station 34 3262 N. Franklin Rd.

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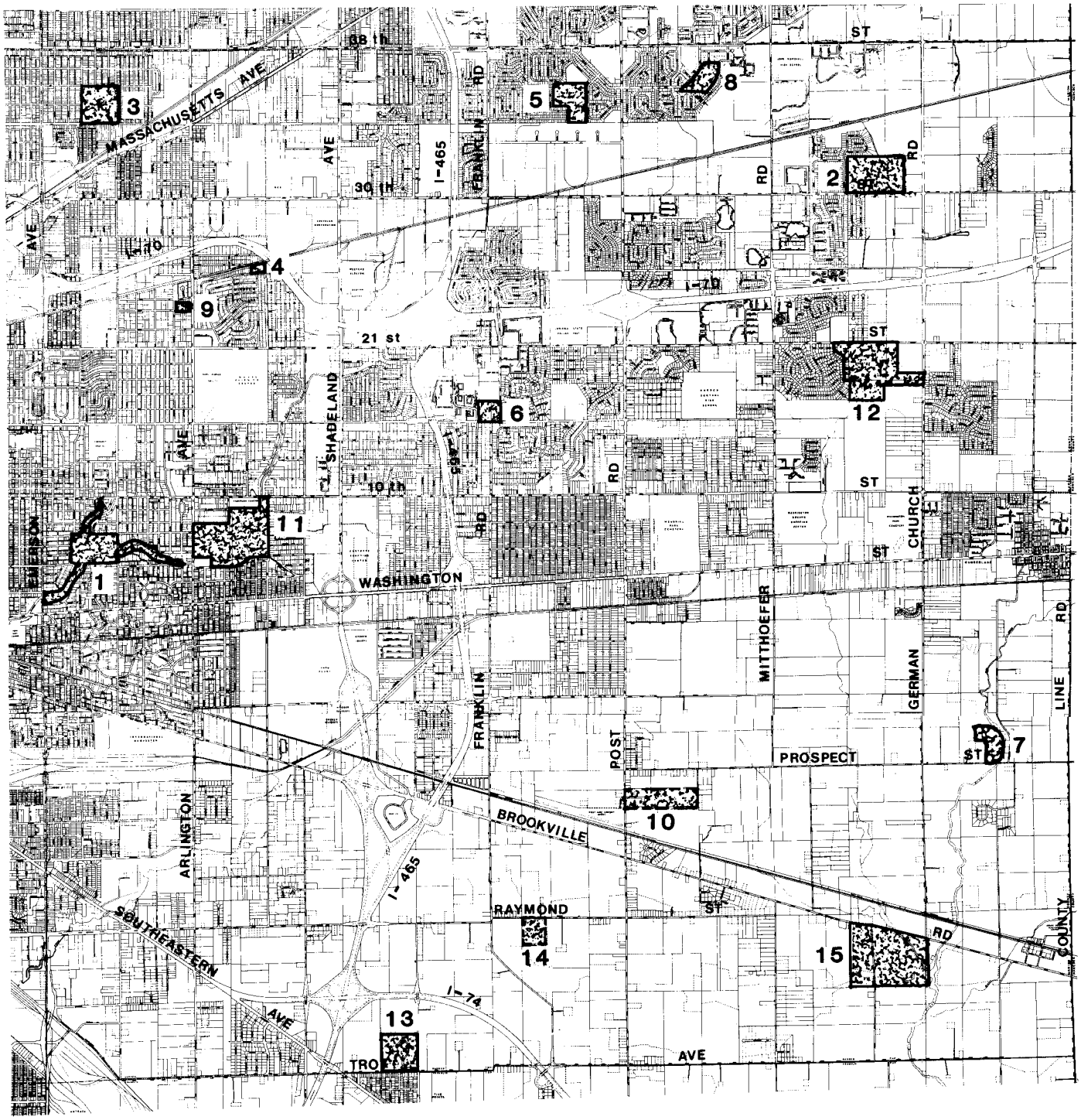

WARREN TOWNSHIP

MAP 18 / PARKS & RECREATIONAL AREAS

COMMUNITY PARKS
1. Ellenberger and Pleasant Run Parkway
2. German Church and 30th
3. Wes Montgomery

NEIGHBORHOOD PARKS
4. Windsor Village
5. Dubarry Park
6. Franklin & 16th Street
7. Paul Ruster

SUBNEIGHBORHOOD PARKS
8. Bellamy
9. O'Brien

UNDEVELOPED PARKS
10. Fatima
14. Pedigo Farm

GOLF COURSES
11. Pleasant Run
12. Maple Creek (previously Heather Hills)
15. Whispering Hills

OTHER RECREATIONAL SITES
13. Marion County Fairgrounds

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CHAPTER 8

WARREN TOWNSHIP DEVELOPMENT DETERMINANTS

A number of natural and man-made factors influence the amount, type, and direction of development in a community. These factors are called development determinants. Six development determinants are described in this chapter: soils, sanitary sewer system, water service, drainage system, flood hazard areas, and gas service. A seventh determinant, the Indianapolis roadway system, was presented separately in Chapter 6.

SOILS

In developing portions of Marion County, a fundamental factor to be considered prior to urban development is the soil's capability to accommodate development with a minimum of adverse economic and environmental consequences.

In 1969, a Soil and Water Conservation District (SWCD) was established in Marion County to promote soil and water conservation. The SWCD receives technical assistance from the United States Department of Agriculture, Soil Conservation Service (SCS). One of the major accomplishments of the SWCD was the identification and mapping of soils within Marion County (completed in 1974). The Soil Survey of Marion County, Indiana, issued by SCS in 1978, was an important source of information for this chapter.

In the Soil Survey, the SCS rated all soils' urban development potential according to their suitability for septic tank absorption fields and structural foundations. Suitability was based primarily on soil characteristics such as (1) natural drainage; (2) soil compressibility (an indicator of how soil will handle loads); and (3) shrink/swell potential (a determinant of whether changes in soil due to moisture will damage building foundations, basement walls, and roads). SCS rated each soil type for its building site development limitations under the following categories:

- slight: soils are favorable and limitations are minor and easily overcome;
- moderate: soils are unfavorable but limitations can be overcome by special planning and design; and
- severe: soils are so unfavorable that special designs or intensive maintenance are required.

Inadequacy of Soils Data Alone

1. The soils data provided by the SWCD does not eliminate the need for on-site testing, evaluation, and planning before design and construction takes place on a specific site.

2. Soil areas too small to delineate (generally, less than two acres) may occur within another soil mapping area. Therefore, more detailed site evaluation is required if small sites are to be developed.

3. Through the application of proper design and construction techniques, it is possible to overcome many of the limitations of a soil for a specific use.

Charting and Mapping of Soils

A soil association is a distinctive pattern of soil in defined proportions. The 24 different soil types identified in Marion County can be grouped into four major soil associations, an arrangement which sacrifices some of the detail but presents an overall picture of the township's soil characteristics. This generalized picture is important for broad planning issues such as transportation corridors, development densities, or comparison of geographic areas. Map 19 provides the general soil associations characteristics of Warren Township.

The soil map indicates that most of the soil in the township is the Crosby-Brookston soil association. The other two major soil associations, Miami-Crosby and Genesee-Sloan, predominate near Pleasant Run, Lick Creek, Grassy Creek, and Buck Creek. As can be seen in the chart below, all three of these soil associations severely limit septic system development due to surface water ponding, slow permeability, and a high seasonal water table.

General Soil Association	% of Warren	% of Marion	Limiting Features	Limits on Septic
Crosby-Brookston	60	40	Poor drainage, wetness, ponding	Severe
Miami-Crosby	30	30	Wetness, erosion, ponding	Severe
Genesee-Sloan	10	12	Flooding, wetness, poor drainage	Severe
U.L.-Fox-Ockley	*	18	Poor filter, erosion	Slight

* Less than 1%.

Overcoming these severely limiting soil characteristics requires both sanitary sewer service and associated surface water removal, both of which will prevent contamination of groundwater and drinking water supplies. Storm sewers are also needed, especially where subsurface drainage outlets are inadequate or nonexistent.

SANITARY SEWER SYSTEMS

The availability of sanitary sewers is a key factor affecting the rate and type of growth in portions of Marion County. In Warren Township, the availability of sanitary sewers is extremely important due to the unsuitability of the soils for septic systems.

Influence of Soil Types

Most of the northern half of Warren Township is served by sewers (see Map 20). The southern half, however, is not. All the developed areas, with the exception of the sewered areas, rely on septic sewage systems. This poses a serious problem, because the area's predominant soil types cannot adequately sustain septic systems without intensive maintenance and special design.

Each soil association in Warren Township poses a different problem for septic systems. Crosby-Brookston soils present severe limitations because of the presence of clay and high seasonal water tables. The clay prevents the natural absorption of the septic water by the soil. A high water table also inhibits absorption by saturating the soil and thus preventing the absorption of the septic water discharge. Both conditions result in the sewage remaining on or near the surface of the ground, where it can easily endanger the health of residents.

Miami-Crosby soils are unsuitable for septic systems because they are characterized by wetness and susceptibility to erosion. The Crosby component of this soil type has problems similar to those mentioned above. When Crosby is combined with the rolling and sometimes steeply sloped Miami soils, water tends to pond in depressions after a storm. The surface water saturates the soils and inhibits the absorption of the septic system effluent.

The final soil type, Genessee-Sloan, severely limits the use of septic systems because of its location in floodplain areas near streams. If flooding occurs, septic systems situated in these soils fail. As floodwater recedes, it transmits the sewage into nearby streams.

Protection of Subsurface Water

In order to minimize the possibility that septic system failures could contaminate subsurface water supplies, the

Indianapolis Public Sewer System can be extended into areas where failure is likely. Retro-fitting a network of sewer lines into an existing developed area or subdivision is called a Barrett Law Extension. One problem with providing sewers to existing residential areas is the considerable expense that each homeowner must then bear for the new sewer system. The more Warren Township residents that have already paid for and installed septic systems, the more difficult it will be to convert the area later to sewer service because of the expense.

Nearly all new residential development in Warren Township will need to include sanitary sewer connections except for lots that meet the stringent requirements for septic systems. The Marion County Health Department generally does not approve septic systems for lots smaller than one acre. Furthermore, due primarily to the poor soil associations in Warren Township, even larger lots may not meet health standards for septic systems. To be considered for approval for septic systems, even lots larger than an acre should have (1) high elevation, (2) a tendency not to pond, and (3) proximity to creeks or ditches for drains to carry groundwater away from septic system contaminants. Such lots are uncommon in Warren Township.

OTHER DEVELOPMENT DETERMINANTS

Water Service

The northern half of Warren Township, excluding the northeastern corner, is completely served by water mains. Water service is much less accessible, however, in the southern half of the township. Map 21 diagrams areas where water service is accessible, not necessarily where water mains are connected. Because private wells exist both inside and outside the water service area, the environmental and health issues linked to septic systems--as discussed under "Sanitary Sewer Systems"--apply in much of the township.

Drainage Systems, Flood Control, and Gas Service

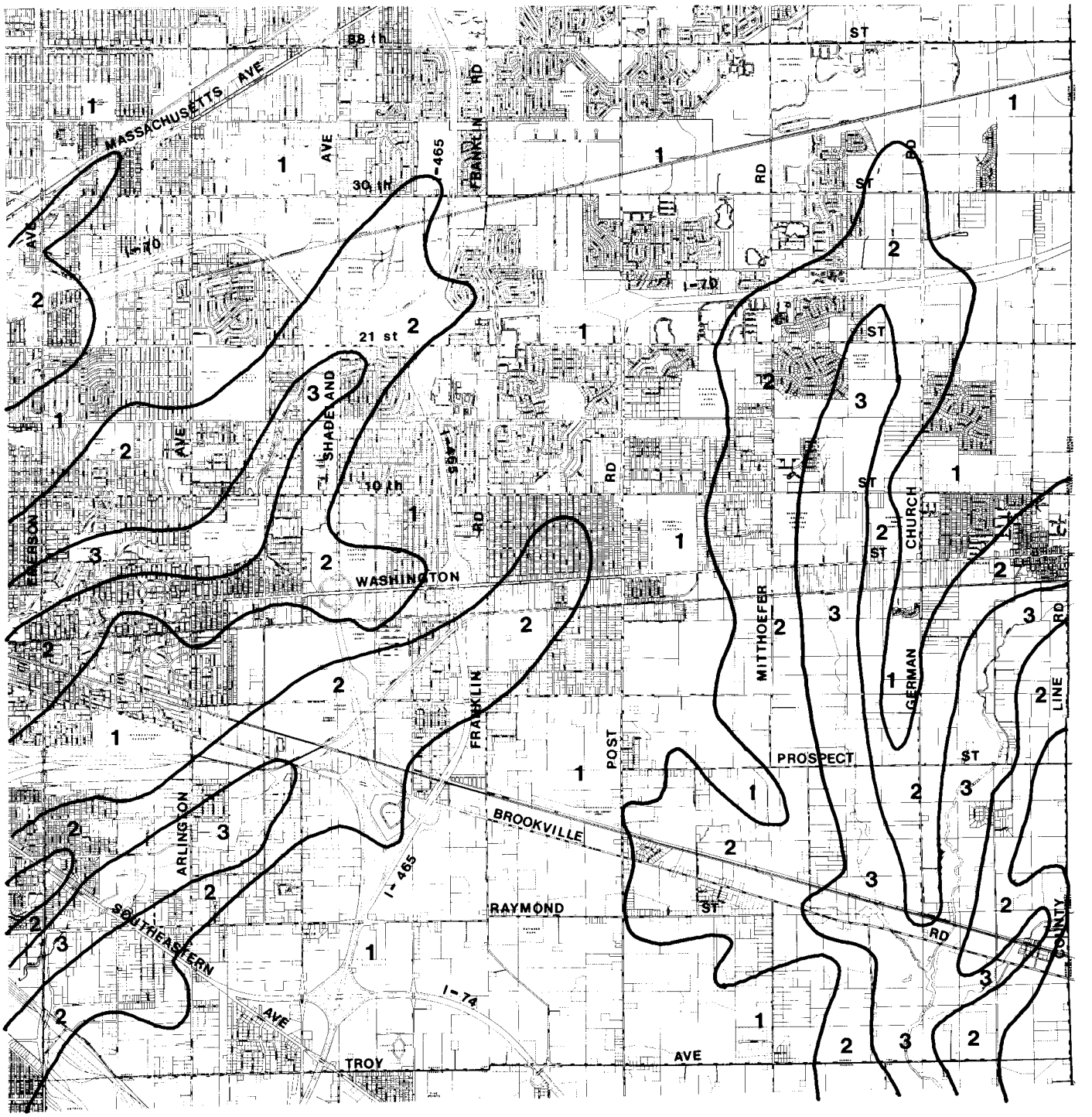
The water drainage system in Warren Township can be examined in light of generalized floodplains and floodways in the township (see Map 22), along with specific control projects for flood hazard areas and drainage (see Map 23).

The term "floodplain" refers to the entire land area which would be submerged beneath floodwaters in a 100-year flood. Floodplains include floodways and the low surrounding areas that hold water when the floodways overflow. Development in the floodplain is allowed provided that flood protective measures for structures are first approved by the Department of Public Works and that certain land grade elevation requirements for structures are satisfied.

The term "floodway" generally refers to the stream channel required to conduct floodwaters downstream. Floodways are therefore usually more narrow than floodplains. They are designed to prevent potential loss of life and damage to property and to maintain water quality. Only open uses and/or necessary public and semi-public uses (those dependent on proximity to surface water) are permitted in floodways.

The flood control and drainage projects shown on Map 23 are some of the latest of a number of such projects undertaken in Warren Township in recent years.

Gas service is generally accessible in the areas shown on Map 24. Because almost all of the township has gas service, this last development determinant will likely guide development less than the other five.



WARREN TOWNSHIP

MAP 19 / GENERAL SOIL ASSOCIATIONS

1 Crosby-Brookston

2 Miami-Crosby

3 Genesee-Sloan

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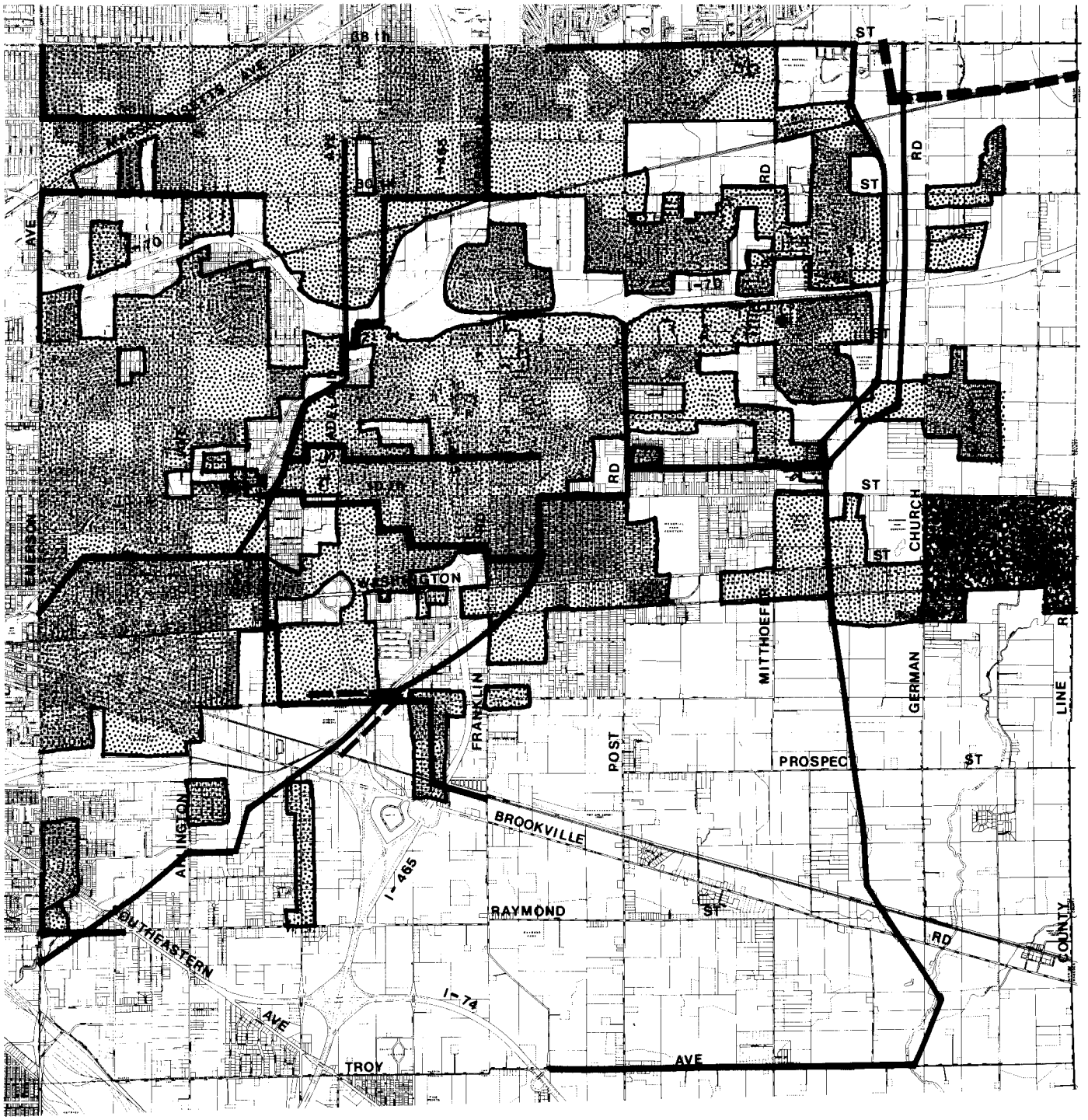

WARREN TOWNSHIP

MAP 20 / SEWER SERVICE 1989

Existing Interceptors

Force Mains

Indianapolis Sewer Service

Cumberland Sewer District

Lawrence Ridge Participating District

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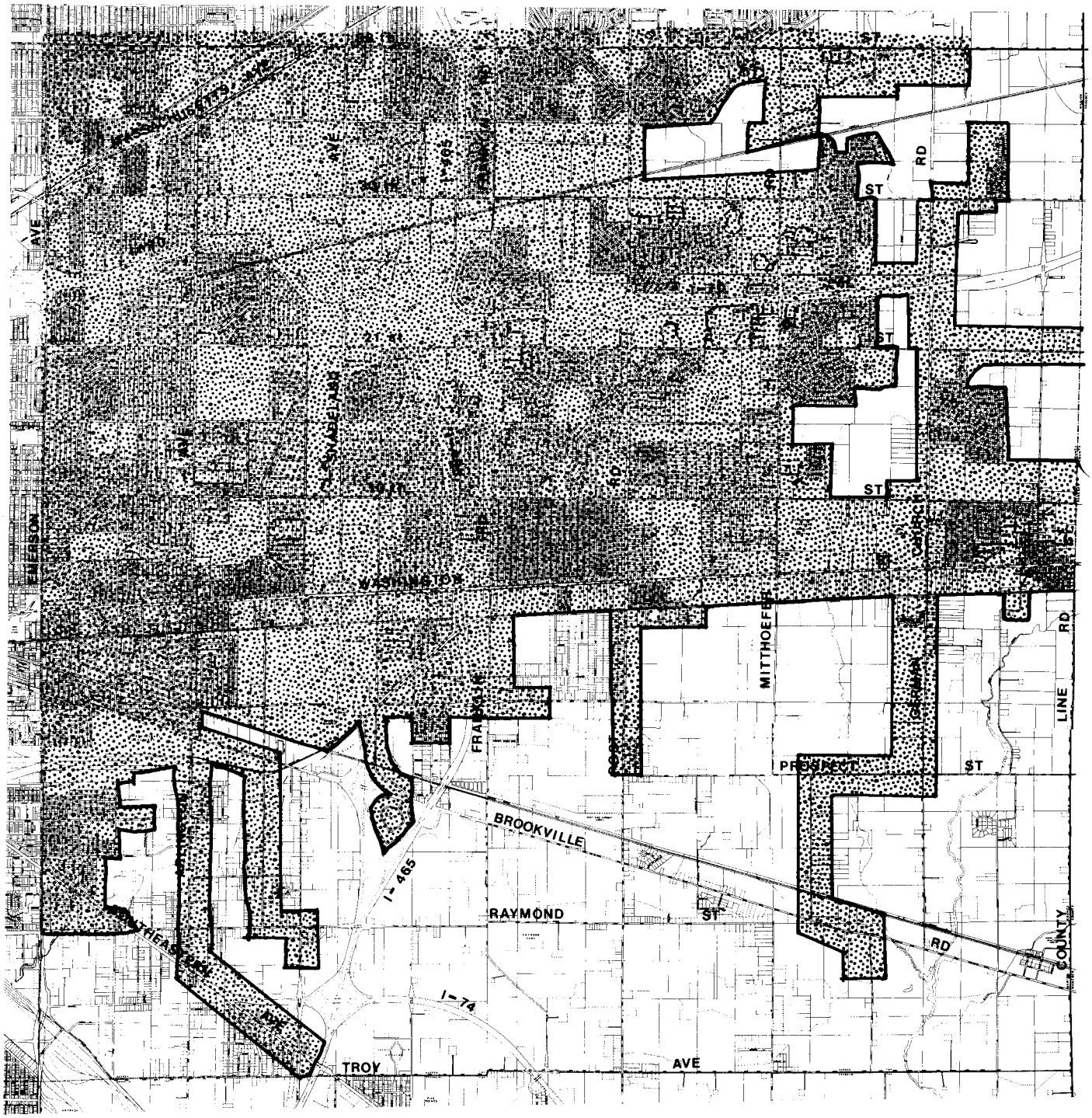

WARREN TOWNSHIP

MAP 21 / WATER SERVICE AREA 1989

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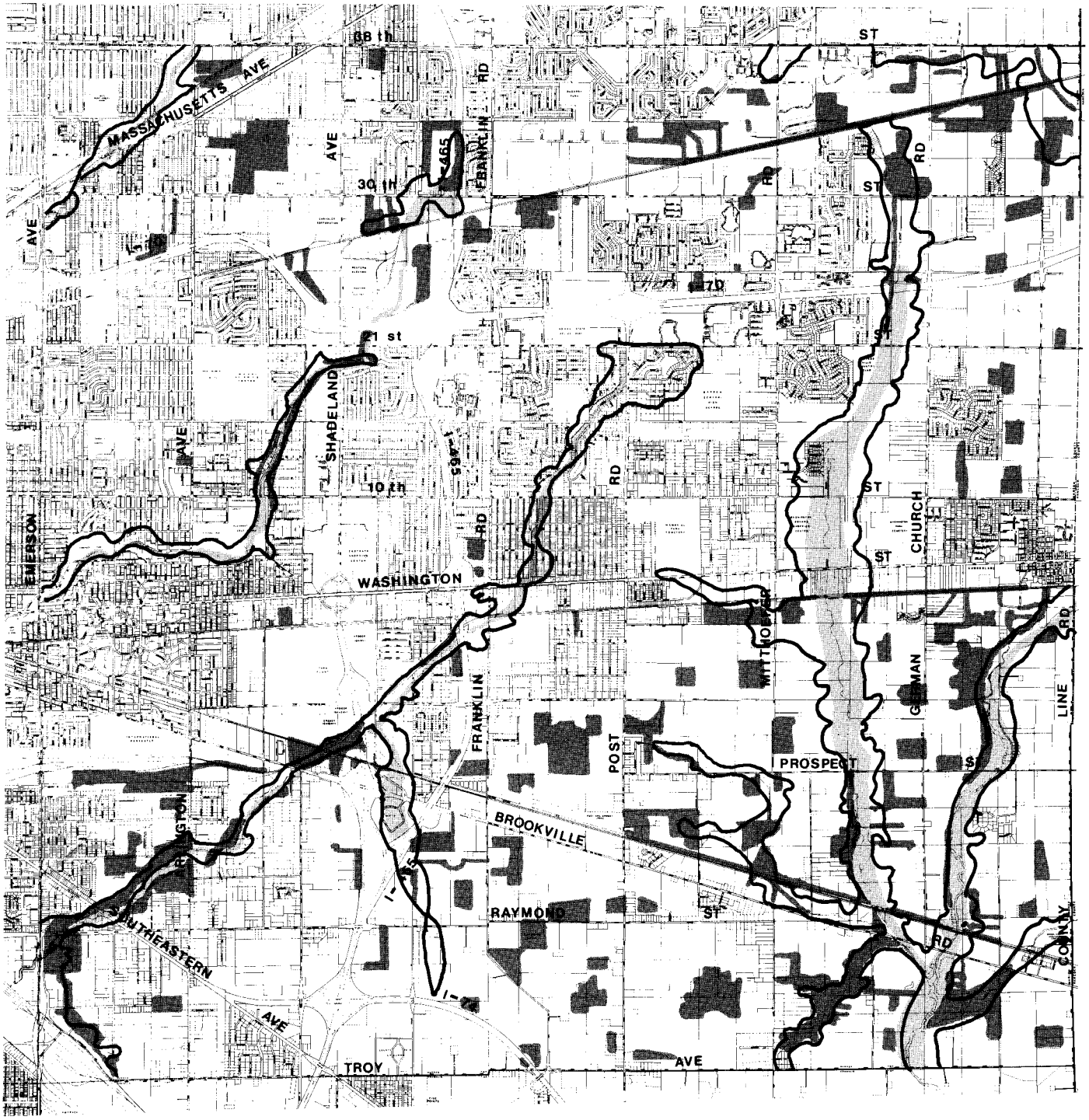

WARREN TOWNSHIP

MAP 22 / GENERALIZED FLOODPLAINS AND WOODED AREAS

100-year Flood Boundaries

Floodplain

Floodway

Wooded Areas

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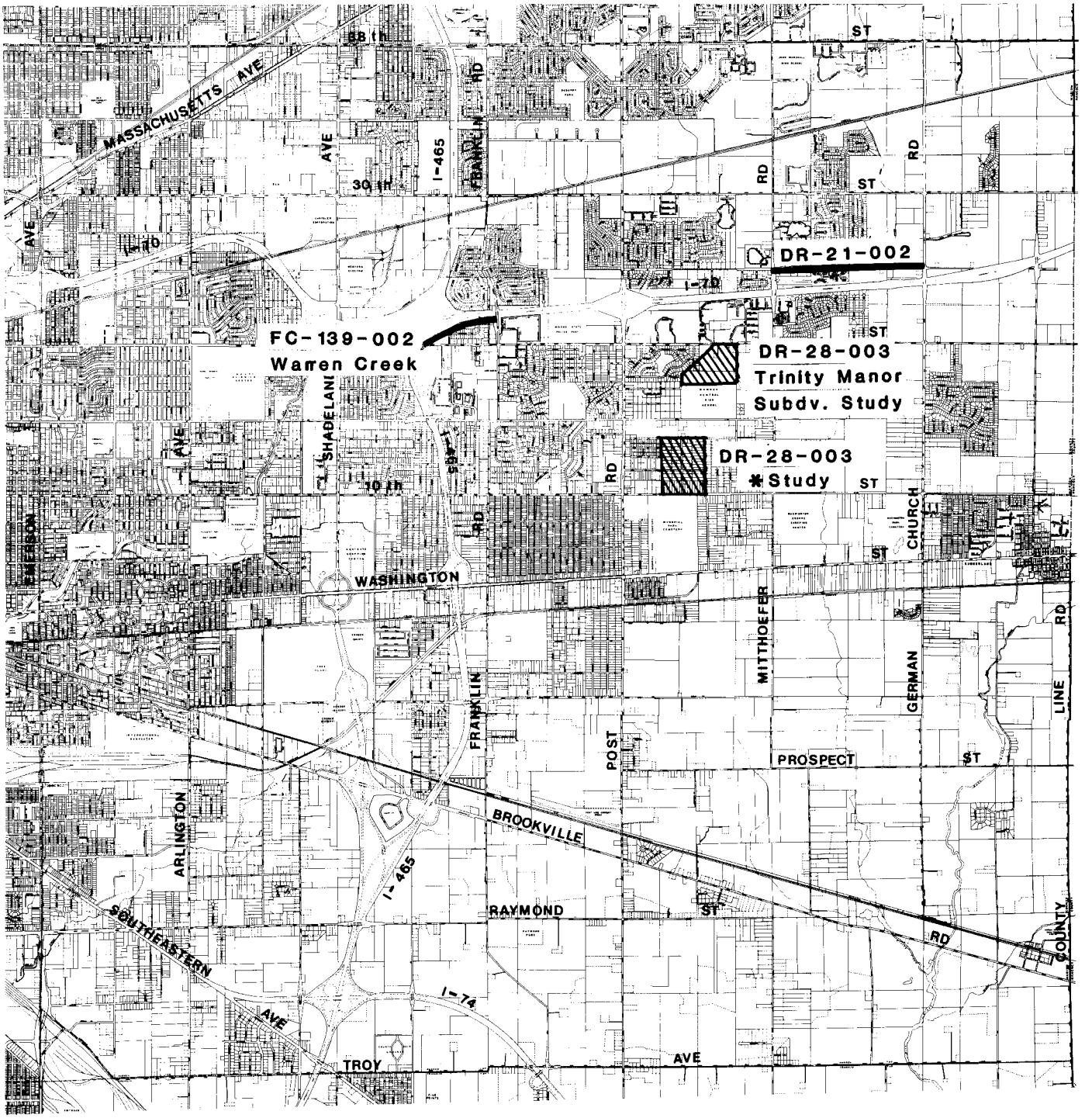

WARREN TOWNSHIP

MAP 23 / PROPOSED FLOOD CONTROL BOND PROJECTS

DR - Drainage Improvements

FC - Flood Control Projects

Study Area For Potential Project

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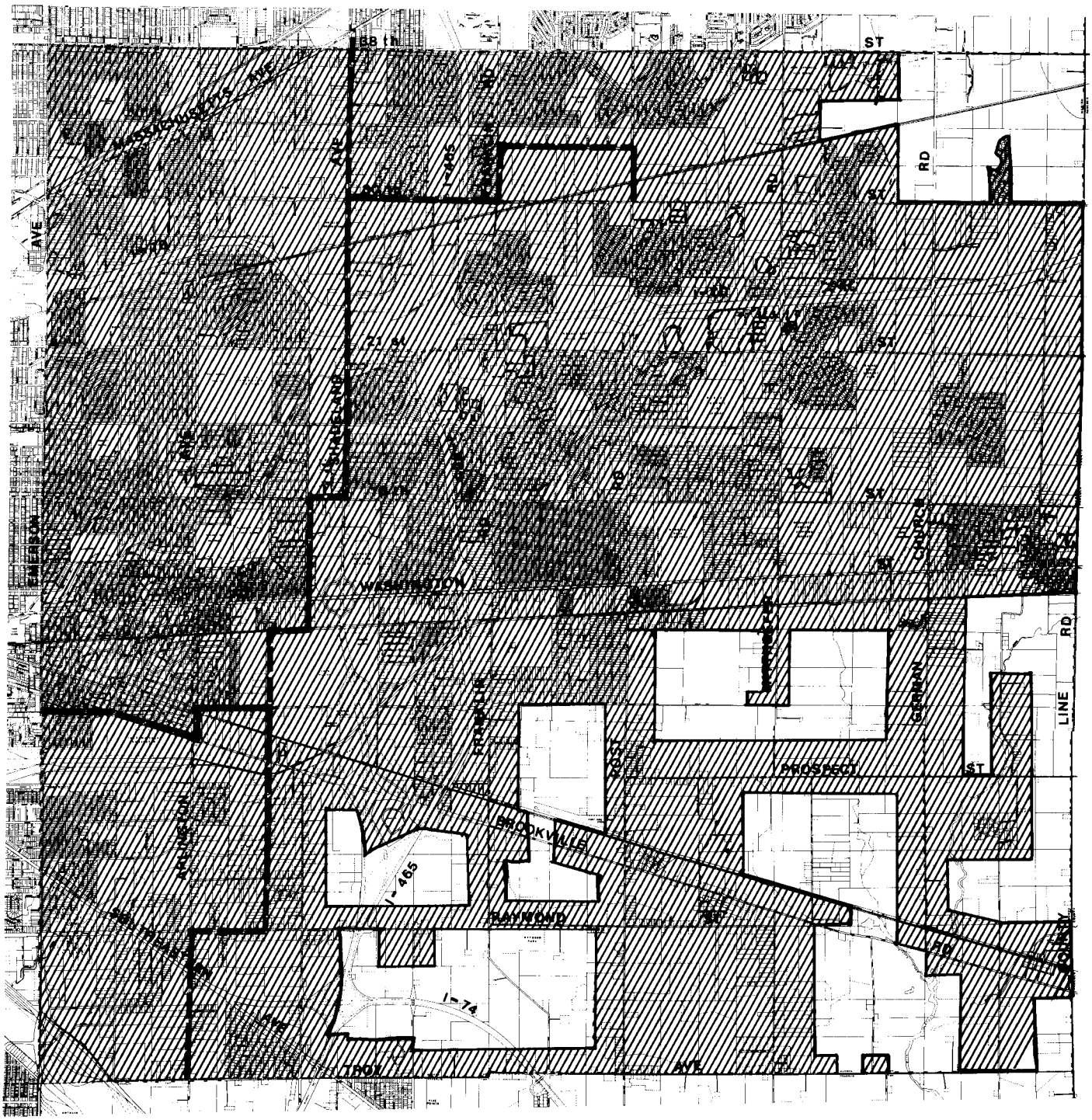

WARREN TOWNSHIP

MAP 24 / GENERALIZED GAS SERVICE

Natural Gas Mains

Gas Service Area

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CHAPTER 9

PROJECTED CHARACTERISTICS OF WARREN TOWNSHIP

One of the purposes of this document is to provide a picture of Warren Township's future in terms of its socio-economic characteristics. This section includes the estimation of population and employment within Warren Township by utilizing land use maps, housing starts and losses data, and various U.S. Census materials. Using these sources, projections of social and economic indicators were made to create an image of Warren Township as it would exist if it were fully developed as recommended by the 1984 Comprehensive Plan. These projections are also based on the assumption that all existing uses and buildings on developed land would remain intact.

The residential element of Warren Township's future will be presented through estimates of future housing stock, number of households, and total population. The commercial element will be identified via projections of office and retail employment, total acreage of land committed to office and retail uses, and the total square footage of building space devoted to those uses. Projections of industrial employment and land use will be similarly presented.

Methodology

The first step to generate the following forecasts was to determine the acreage devoted to existing land uses through the interpretation of aerial photographs. The land use information was transposed onto township maps, and the total acreage committed to each land use classification was calculated. The land use forecasts were then determined by adding the recommended land use acreage for all the remaining vacant parcels, as presented in the 1984 Comprehensive Plan. The underlying assumption, therefore, is that all undeveloped land will develop in accordance with the 1984 Comprehensive Plan.

The residential element of these projections was determined by multiplying the 1989 existing housing density (average number of units per acre) for both the single-family and multi-family categories to the corresponding acreage of vacant land planned for each. Thus, an estimated future increase in number of units for each category was calculated. The sum of the estimated change and the total number of existing units provides a projection of total single-family and total multi-family housing units at the point of full development for Warren Township.

The future commercial and industrial characteristics of Warren Township were estimated by applying an assumed average building square footage per acre to each category's total acreage. The figure was determined for Pike Township in 1987, and was judged

to be a reasonable approximation of the average figure for Warren Township. The total number of undeveloped acres recommended for office, retail, and industrial use by the 1984 Comprehensive Plan were then converted to square footage of built-up space. The density (building square footage per acre) of existing commercial and industrial development was assumed to remain constant. These projections of total building space then provided a basis from which to estimate future employment.

Residential Characteristics

If Warren Township were to realize full development in the manner suggested by the 1984 Comprehensive Plan, it would experience a 138% increase in total housing units over what existed in 1989. By comparison, the percentage increase for the most recent period for which data is available (1980-1989) was 7.3%. Using the methodology described above, Warren Township could absorb approximately 50,000 more housing units while maintaining current densities, assuming full development as presented by the 1984 Comprehensive Plan.

The proportion of the housing stock which would be made up of multi-family housing would increase from 30% in the 1989 estimate to 37% in the case of full development, meaning the current plan anticipates having more multi-family development than what has occurred in the past. The Comprehensive Plan would provide for approximately 29,000 additional units of single-family and 21,000 units of multi-family. The proportion of total units which would be single-family therefore would decrease from 70% to 63%.

An estimate of total households in Warren Township is determined by multiplying the number of housing units by an assumed occupancy rate of 95% (based on the actual occupancy rate in Warren Township for 1988, as reported by the Postal Vacancy Survey). According to the U.S. Census, 32,701 households resided in Warren Township in 1980. The land use studies of Warren Township indicate that in 1989, that figure had risen 5.2% to approximately 34,400 households. At full development, the number of households in Warren Township would increase to about 81,900.

Total population for Warren Township in a state of full development is projected to be 184,300 persons, constituting a 98% increase over the 1988 U.S. Census Bureau estimate of 92,960 persons. To reach this figure, the projected 81,900 total households were multiplied by an assumed average of 2.25 persons per household. An average of 2.25 persons per household was assumed by the Division of Planning on the basis that the current downward trend in average household size is expected to continue, and that Warren Township's average household size will remain near the county average.

Commercial and Industrial Characteristics

Full or total development as recommended by the 1984 Comprehensive Plan would result in an increase in commercial property of 1,016 acres in addition to the 1989 total of 1,298 acres. Retail is assumed to continue to account for 92% of Warren Township's commercial land, and would therefore realize a 76% increase, from 1,198 acres in 1989 to 2,135 acres at full development. Offices would occupy an additional 78 acres of land, a 78% increase over the 1989 level. In terms of building square footage, retail commercial would experience an increase of 2.82 million square feet, while office use would post a similarly significant gain of about 790,000 square feet. Therefore, at full development, a grand total of 22,900,000 square feet of commercial building space would occupy more than 2,100 acres of commercial land in Warren Township.

In 1989, approximately 1,948 acres of Warren Township were developed for industrial use. Under the 1984 Comprehensive Plan's full development scheme, the future development of an additional 2,008 acres would boost Warren Township's industrial base 103% above 1989 levels in terms of developed acreage. Square footage of industrial building space would also increase by more than 27 million square feet.

As the acreage devoted to commercial and industrial uses increases, Warren Township's employment will also increase. Employment densities of one, two, and three persons per 1,000 square feet were assumed for industrial, retail commercial, and office commercial, respectively. By multiplying each of these assumed densities by its corresponding estimated future building square footage, an estimate of additional employment in Warren Township is calculated for each category. Total employment in Warren Township would rise by roughly 53,000 persons (a 122% increase).

RATE OF DEVELOPMENT

The projected residential and commercial full development characteristics of Warren Township were based on the fixed number of acres and the recommendations contained in the adopted Comprehensive Land Use Plan. By applying densities and types of development historically found in Warren Township to the fixed number of total acres, a future development mix was projected with a reasonable degree of certainty. Forecasting the following rates of development was done with somewhat less certainty.

Housing

To prepare a housing development rate, the 1960, 1970, and 1980 U.S. Census information was combined with the 1989 Warren Township housing inventory previously estimated. Using these

data, three annual housing production (or development) rates were derived:

* 29 year rate (1960-1989)..... 596 units/year
* 19 year rate (1970-1989)..... 410 units/year
* 9 year rate (1980-1989)..... 204 units/year

By applying these rates to the additional 50,000 units projected for full residential development of Warren Township, three possible development horizons were established:

* 50,000 units divided by 596 units/year = 84 years (year 2073)
* 50,000 units divided by 410 units/year = 122 years (year 2111)
* 50,000 units divided by 204 units/year = 245 years (year 2234)

The range of years for full residential development of Warren Township is projected to be from 84 to 245 years; that is, total residential development of Warren Township, (given that future development rates will fall between 596 and 204 units per year) should be reached sometime between 2073 and 2234 AD.

Commercial

The rate of development for commercial land was formulated by averaging the square footage of office and retail construction in Warren Township for the years 1980 through 1989. On the average, 750,191 square feet of commercial building space was added to Warren Township's total each year. By dividing this annual average into the additional 12,173,243 square feet of commercial development required to reach the full commercial development anticipated by the 1984 Comprehensive Plan, an estimated full development time horizon of 16 years is calculated. Assuming that recent rates of commercial development remain relatively stable over the next decade, full commercial development of Warren Township is projected to occur by 2005. (Note: This very short time horizon results largely from a shortage of new commercial areas recommended by the 1984 Comprehensive Plan for the undeveloped portions of the township. Therefore, it is considered unrealistic.)

Industrial

The projected development rate and full development horizon for Warren Township's industrial sector were calculated in the same manner as the commercial projection. On average (based upon 1980-1989 data), 663,395 square feet of industrial construction

occurred annually. By dividing this number into the estimated 27,108,000 square feet of industrial development still anticipated by the 1984 Comprehensive Plan for Warren Township, it is determined that complete development would occur in 41 years (2030).

PROJECTION SUMMARY

Warren Township still possesses substantial undeveloped tracts of land which can accommodate future development. In order to reach full development as proposed by the 1984 Comprehensive Plan, the township would have to experience a 138% increase in total housing units, a 98% increase in commercial development, and a 156% increase in industrial development. As a result, the number of households in Warren Township would increase by 238%, and population by 98%. Employment is projected to increase by roughly 56,000 persons. Projected rates of residential development would bring Warren Township to full development at least by the year 2234. Commercial and industrial development rates suggest a less distant horizon--2005 to 2030.

The projected horizons for full development of Warren Township vary widely, ranging from 16 to 245 years in the future. It is important to remember, however, that these projections are based on current rates of development and those of the recent past. Warren Township's rate of development is actually more likely to decrease somewhat as the township begins to approach full development. As the area continues to develop, vacant land will become more scarce and increasingly encumbered with constraints to development, making land more expensive both to acquire and to develop. As a result, infill development of the remaining vacant land will take longer than the earlier development. Consequently, the more distant horizons (ie., years 2073 or 2111) present a more realistic estimate of the range of time during which full development of Warren Township might be reached.

The amount and rate of development necessary to reach a state of full development, even as late as 2234, is likely to heavily burden the local infrastructure in the more rapidly developing areas. Township residents and businesses may face congestion, delays in service, and less-than-acceptable margins of safety as the public sector struggles to catch up with demand. Therefore, in addition to addressing the typical issues of land use appropriateness and intensity, the Warren Township Plan will need to address the issue of development phasing.

ELECTED OFFICIALS

William H. Hudnut, III, Mayor

CITY-COUNTY COUNCIL

Dr. Philip Borst, 25
Julius F. Shaw, AL
Susan Williams, 22
Mary Bridget Moriarty, 15
Beulah Coughenour, 24
Beverly Mukes-Gaither, AL
William A. Dowden, 4
Stanley P. Strader, 23
Gordon G. Gilmer, 1
Glenn L. Howard, 9
Rozelle Boyd, 11
Richard F. Clark, 13
Beurt SerVaas, 2
Stephen R. West, 6
David M. Brooks, AL
David P. McGrath, 20
Jeff Golc, 17
Ray R. Irvin, 21
Dwight Cottingham, 18
William Schneider, 3
Carlton E. Curry, AL
Kenneth N. Giffin, 19
Harold Hawkins, 16
Paul H. Jones, 10
John Solenberg, 5
Stuart F. Rhodes, 7
Allen L. Durnil, 14
Holly M. Holmes, 8
Betty Ruhmkorff, 12

ADMINISTRATION AND POLICY DIRECTION

METROPOLITAN DEVELOPMENT COMMISSION

James Wade, Jr., President
Dr. Lehman D. Adams, Jr.
Ed Buckley
James J. Curtis
Larry Tindall
Lois J. Horth
Mary Ann Mills
Michael W. Rodman
Donald F. Elliott, Jr.

DEPARTMENT OF METROPOLITAN DEVELOPMENT

M. D. Higbee, Director
Stuart Reller, Administrator, Division of Planning

PROJECT COORDINATION

Clarke Kahlo, Deputy Administrator
Tom Bartlett, Senior Planner
William Gentry, Planner
Jay Getz, Planner
Terry Spradlin, Intern
Ned Wissel, Secretary
Phil Pettit, Drafting Superintendent
Darrell Walton, Draftsman
John Roberts, Draftsman
Kenneth Pearcy, Print Shop Manager
George Jacobs, Printer
Burton Carter, Printer